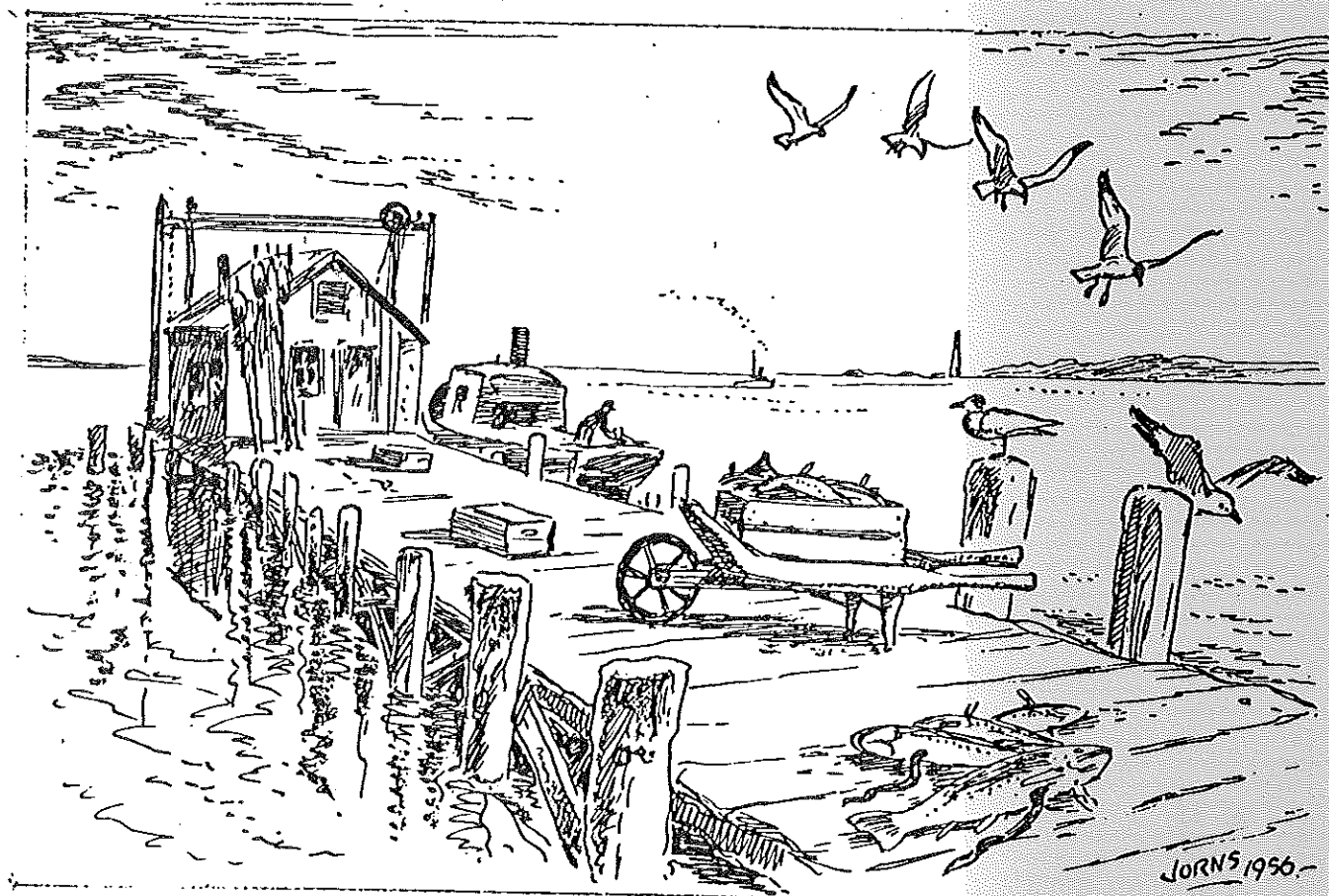


WISCONSIN DEPARTMENT OF NATURAL RESOURCES

DIVISION OF FORESTRY, WILDLIFE AND RECREATION



WISCONSIN'S
LAKE MICHIGAN
COMMERCIAL
FISHERIES

1940 - 1973

BUREAU OF FISH AND WILDLIFE MANAGEMENT

Fish Management Section Report Number 75

December, 1974

Department of Natural Resources
Box 450
Madison, Wisconsin 53701

LAKE MICHIGAN COMMERCIAL FISHERIES
By Ronald J. Poff

Background

One hundred years ago the Wisconsin Fisheries Commission was established. The commissioners had fish culture as their primary interest and reasoned that these benefits should accrue especially to the larger lakes "Michigan, Superior" and their interest should concentrate here since whitefish and trout were diminishing in number. This was attributed to new gear for Great Lakes fishing such as gill nets and pound nets. There were no season limits.

By 1894 fishing pressure had increased considerably and it was estimated that over 400 miles of nets were fished each day in Lake Michigan and Green Bay out of Wisconsin ports.

Since the early years of the Fisheries Commission, Department files are replete with documents alluding to highs and lows in commercial fish production in Lake Michigan. Among the many causes for such variations in abundance commonly cited by early biologists, fishery administrators, and commercial fishermen were the introductions of new methods of fishing, heavy fishing pressure, overharvest of small fish by openly flaunting mesh size laws and introductions of exotic species such as the smelt which authorities claimed would become as great a nuisance in the Great Lakes as carp in inland waters.

The history of the development of the fishery is interesting and offers many plausible explanations for changes in fish population abundance. However, for the present we must consider the fishery we now have in Lake Michigan and the problems it now faces.

Not the least of these problems are: the continuing role of exotic species (alewives, smelt, sea lampres) the proper regulation of new fishing gear and the prevention of overharvest.

The impact of the sea lamprey was in fact so great that its basic prey, the lake trout, was eliminated from consideration as a commercial fish by the late 1950's. For this reason lake trout will not be considered in this description of the Lake Michigan commercial fishery.

The report is intended to provide baseline information on the current commercial fishery in Wisconsin waters of Lake Michigan.

The maps and charts included indicate the current distribution of the commercial fishing industry on a species basis, generally, representative of the years 1971 through 1973. Trends in commercial production are cited for the years 1940 through 1973 where data is available. The current fishery for each species is defined in terms of numbers of fishermen involved and the extent of their fishing effort.

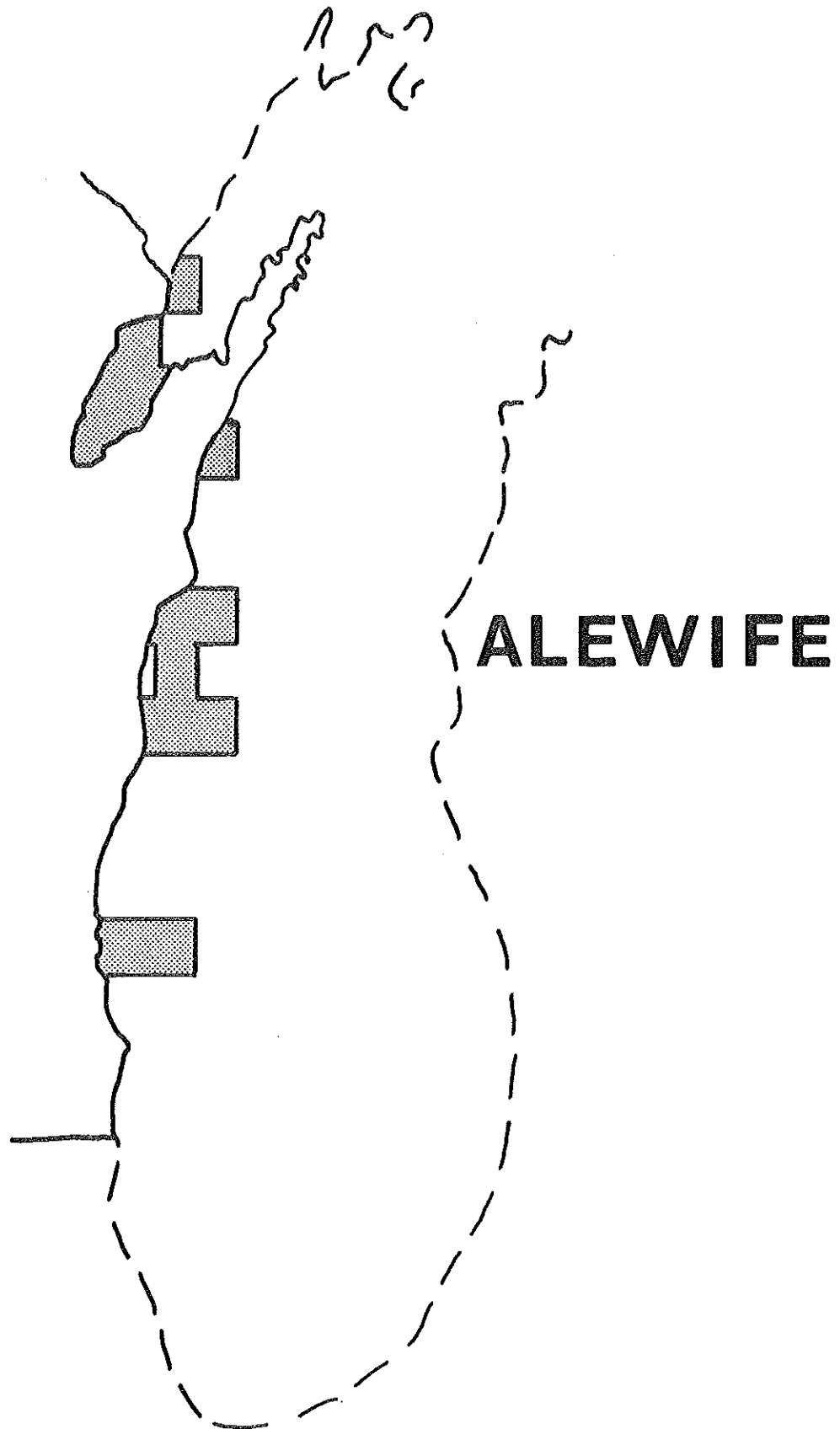
It is intended that this should be a representation of the fishery as it now exists, the product of natural and man-made change.

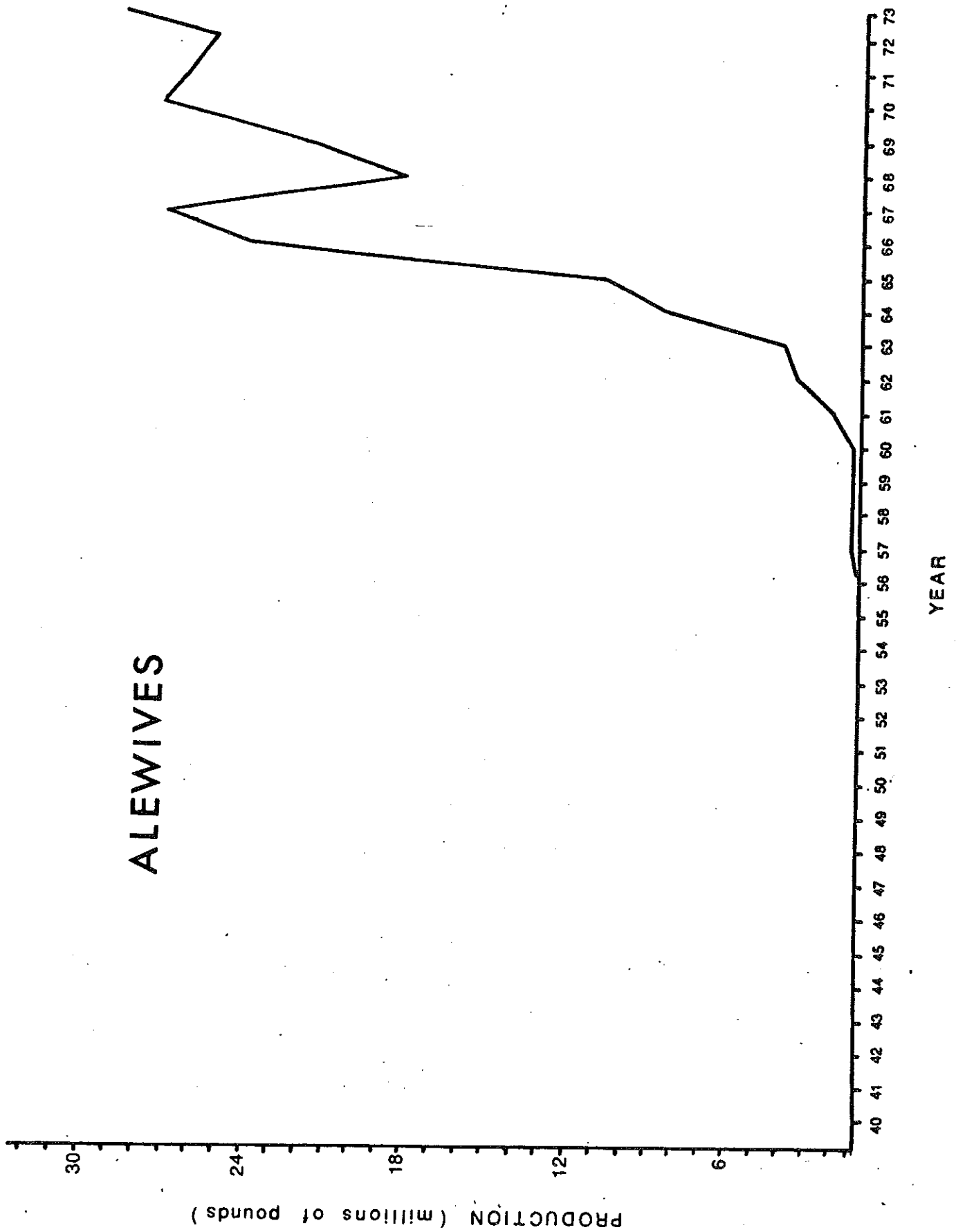
Current State of the Fishery

The commercial fishery is presently sustained by four major species, the common whitefish, yellow perch, bloater chubs and alewives. These four species constitute over 95% of the total commercial fish volume landed by Wisconsin fishermen on Lake Michigan and Green Bay. While production in pounds of fish taken commercially has risen in recent years there has also been a marked shift to high volume low value species with one species, the alewife producing more than ten million pounds annually in Wisconsin waters. The high value species such as whitefish and yellow perch are now exploited at production levels well below those enjoyed historically.

This definition of the fishery is based primarily on commercial fishermen's daily catch reports which are required to be submitted monthly to the Department of Natural Resources. The U. S. Fish & Wildlife Service is the ultimate repository for fishermen's daily reports which are compiled and processed at the Great Lakes Fisheries Laboratory at Ann Arbor, Michigan. In recent years the fishermen have been required to report their catches on a statistical grid basis. A map illustrating the grid system is included as part of this report. Regional descriptions of fisheries are based on this grid system.

GRID REPORTING SYSTEM





ALEWIFE

Alewife production in 1973 totaled 31,298,000 pounds in Wisconsin waters. This catch was valued at \$314,324.00.

Since 1970 the trend has been to stable production of alewives in these waters. Each year since 1966 the commercial harvest has been in excess of 18,000,000 pounds. This is phenomenal when one considers that production was negligible prior to 1956.

A major harvest occurs in the areas bordering Pensaukee and Green Bay and off the ports of Manitowoc, Two Rivers and Milwaukee in Lake Michigan proper.

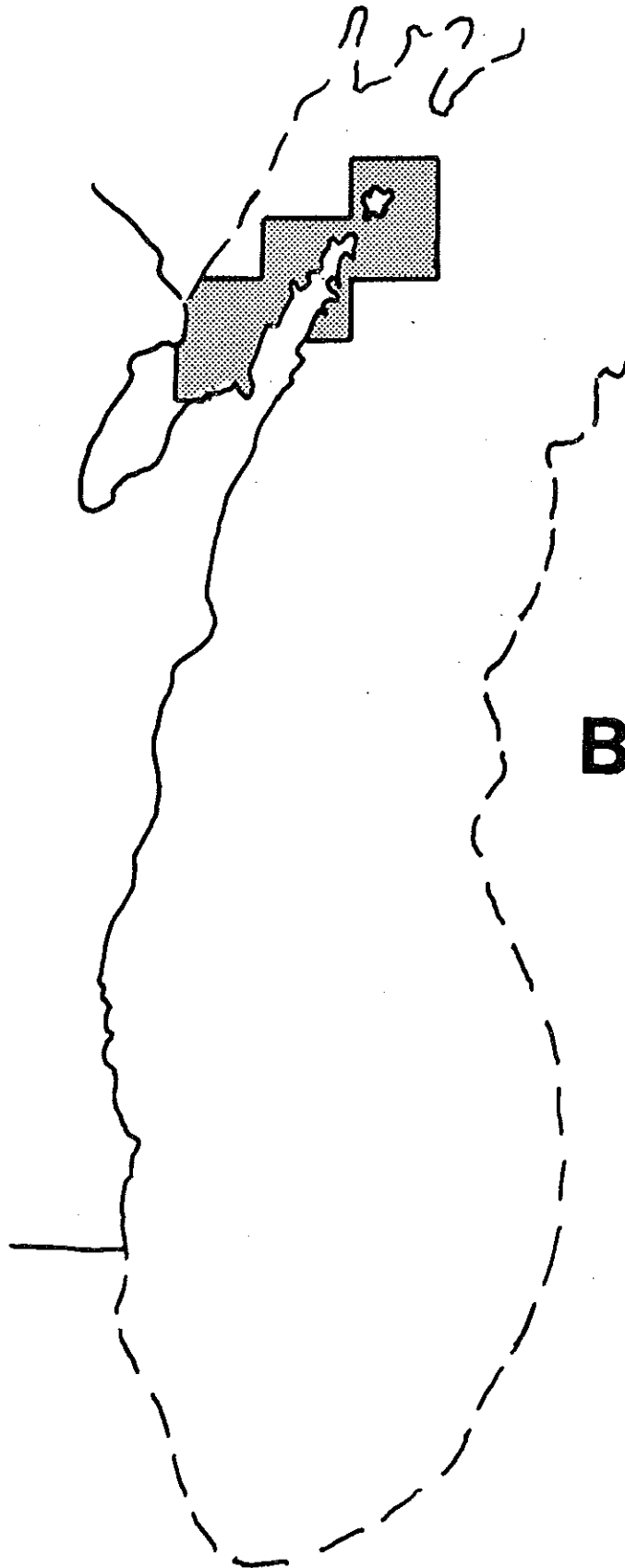
The catch is split nearly equally between trawlers and pound netters. In 1973, 39 licensees reported significant alewife catches. Of this number five trawlers employed a total of nine vessels in the fishery. These vessels accounted for 15.9 million pounds of alewives.

1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per <u>1</u> / Unit of Effort	Catch in Pounds
2"+ gill net	25	1,915,900'	22.0	42,078
4"+ gill net	4	146,600'	868.3	127,295
Pound net	15	1,338 lifts	11,219.8	15,012,086
Shallow trap net	2	24 lifts	3,232.3	77,575
Fyke net	7	420 lifts	136.1	57,174
Trawl 2/	5	5,168.5 hrs.	3,092.2	15,982,020
			Total	31,298,228

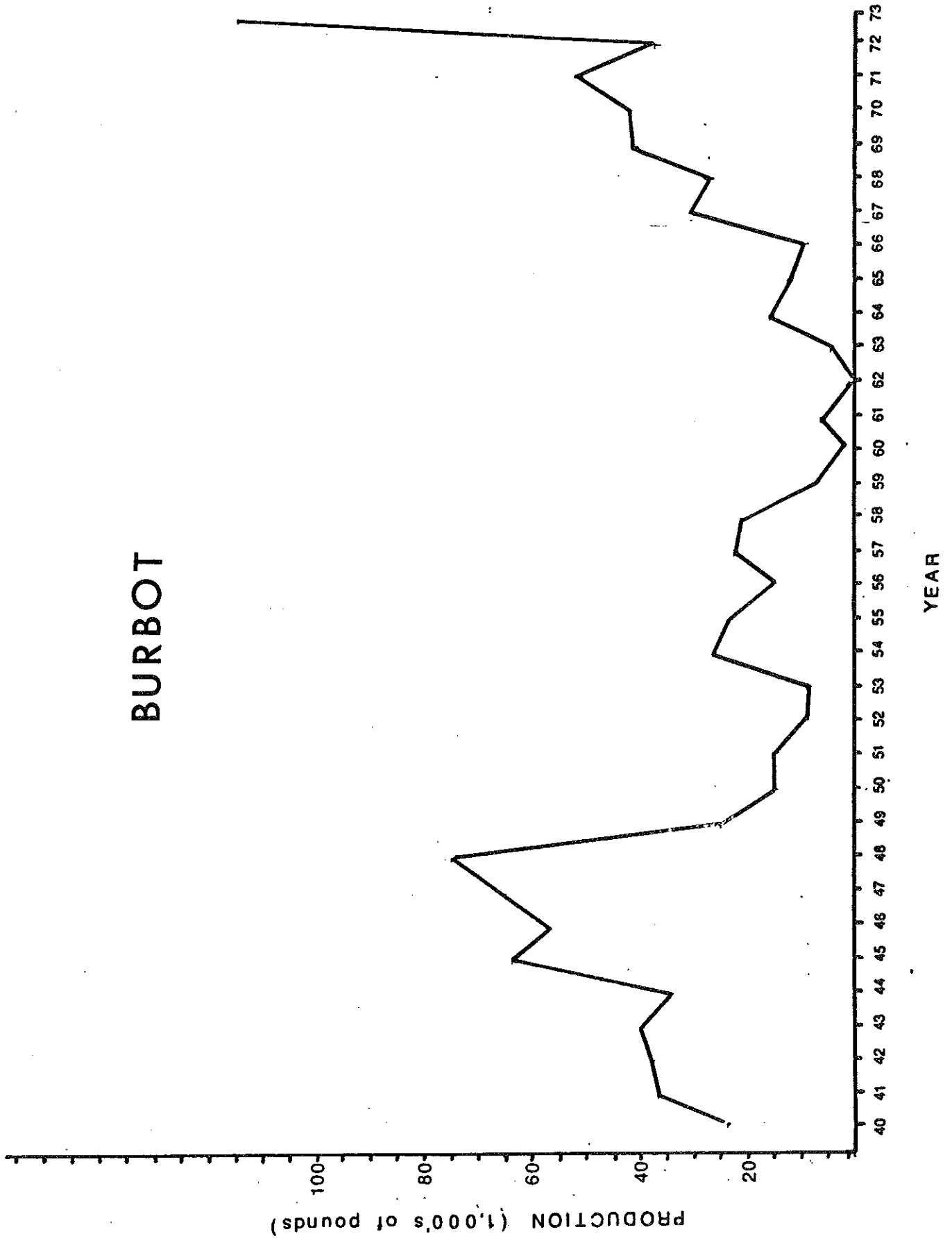
1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear.

2/ Effort in hours and tenths.



BURBOT

BURBOT



BURBOT

The commercial catch of burbot in Wisconsin waters in 1973 is reported as 113,967 pounds valued at \$2,735.00.

This is an incidental catch primarily taken in the gill net fishery for whitefish and in the fyke net fishery for northern pike, suckers and other rough fish.

The major areas in which burbot are produced are directly associated with the whitefish fishery and are located in Green Bay adjoining the Door County peninsula and the mainland shore off Marinette, Oconto and Pensaukee.

The commercial catch in 1973 represents the first year in which production has exceeded 100,000 pounds in the period since 1940. The lowest levels of commercial harvest were reported in the period from 1959 to 1963 when the sea lamprey was exerting its major effect on both the fish stocks and the fishing industry.

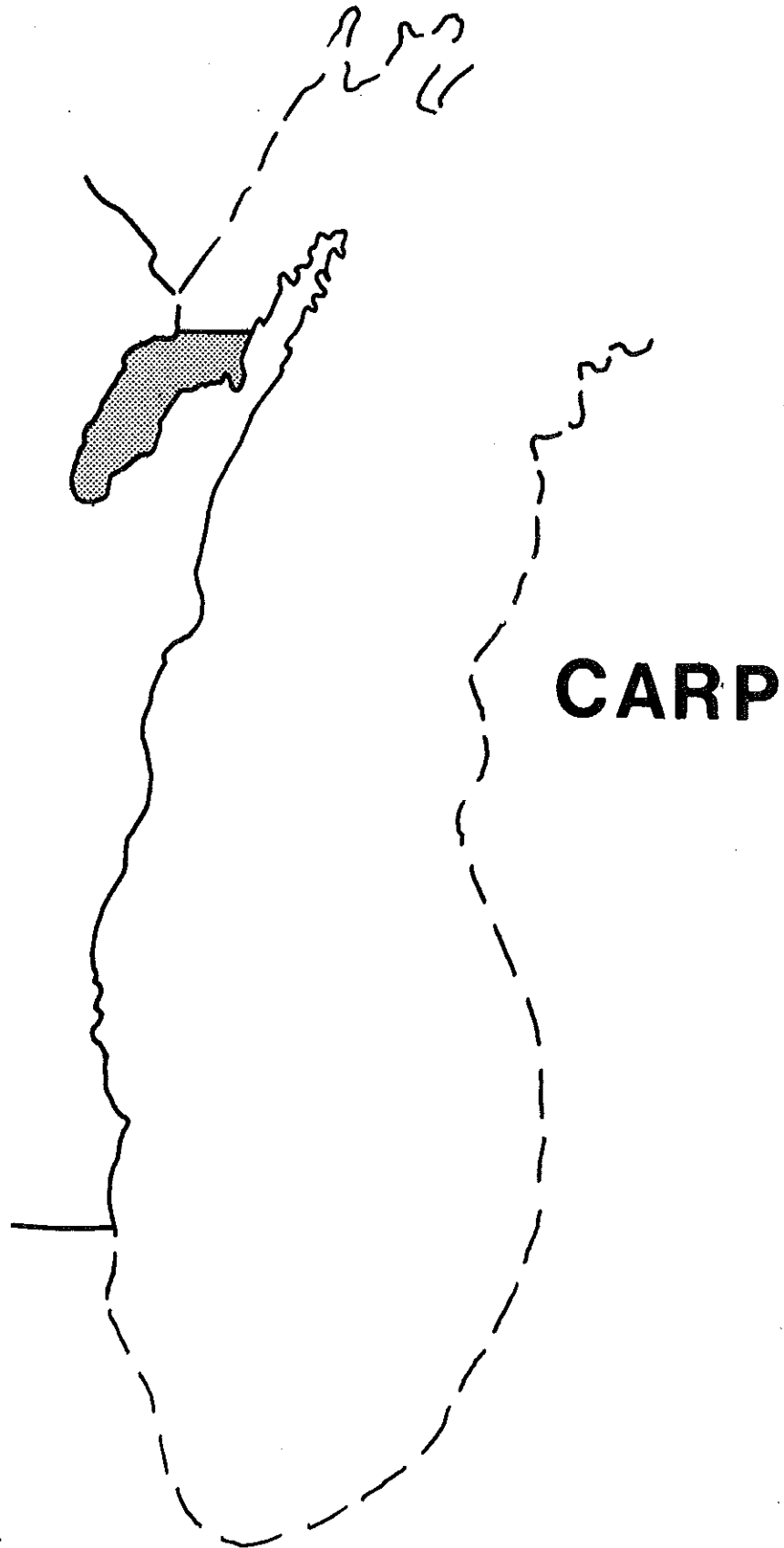
More than 70 licensees reported incidental catches of burbot in 1973.

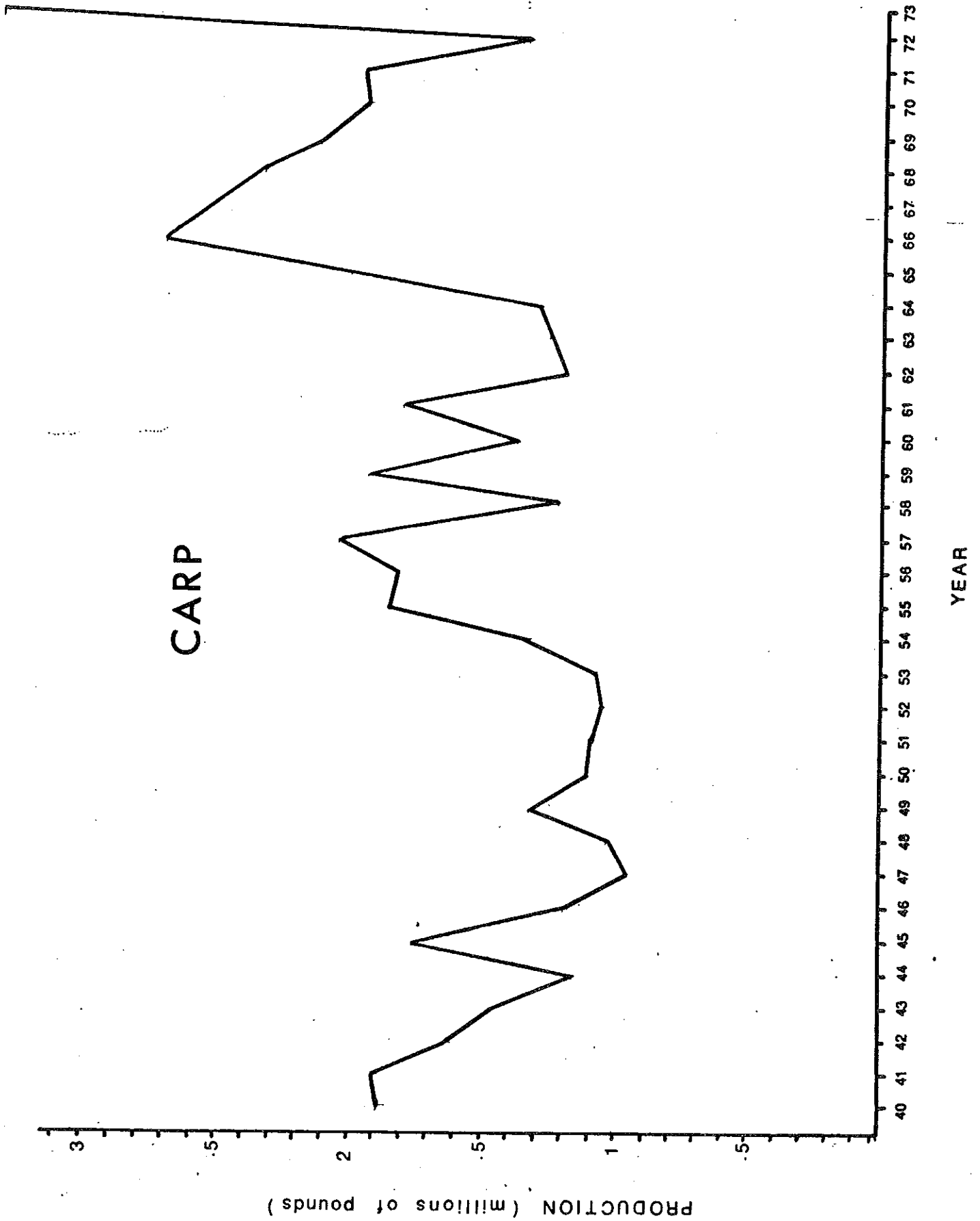
1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in Pounds
2"+ gill net	15	386,700'	9.8	3,783
4"+ gill net	23	2,810,800'	20.0	56,077
Pound net	3	18 lifts	66.9	1,205
Shallow trap net	3	62 lifts	24.6	1,525
Deep trap net	1	1 lift	13.0	13
Fyke net	8	1,055 lifts	48.4	51,064
Trawl 2/	1	17.3 hrs.	17.3	300
			Total	113,967

1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear.

2/ Effort in hours and tenths.





CARP

Commercial production of carp in Wisconsin waters in 1973 was 3,207,905 pounds. The value of this catch was estimated at \$130,604.00.

In the past carp production has been stable at generally less than 2 million pounds per year. This fishery is generally confined to southern Green Bay, that being an area south of the line from Marinette east to the Door Peninsula.

The fishery is generally undertaken with haul seines or with very large mesh gill nets. In 1973 the 26 fishermen reported significant catches of carp. Of the total catch 83% was taken in haul seines while 13% was taken in 7" or greater mesh gill nets.

1973 FISHERY

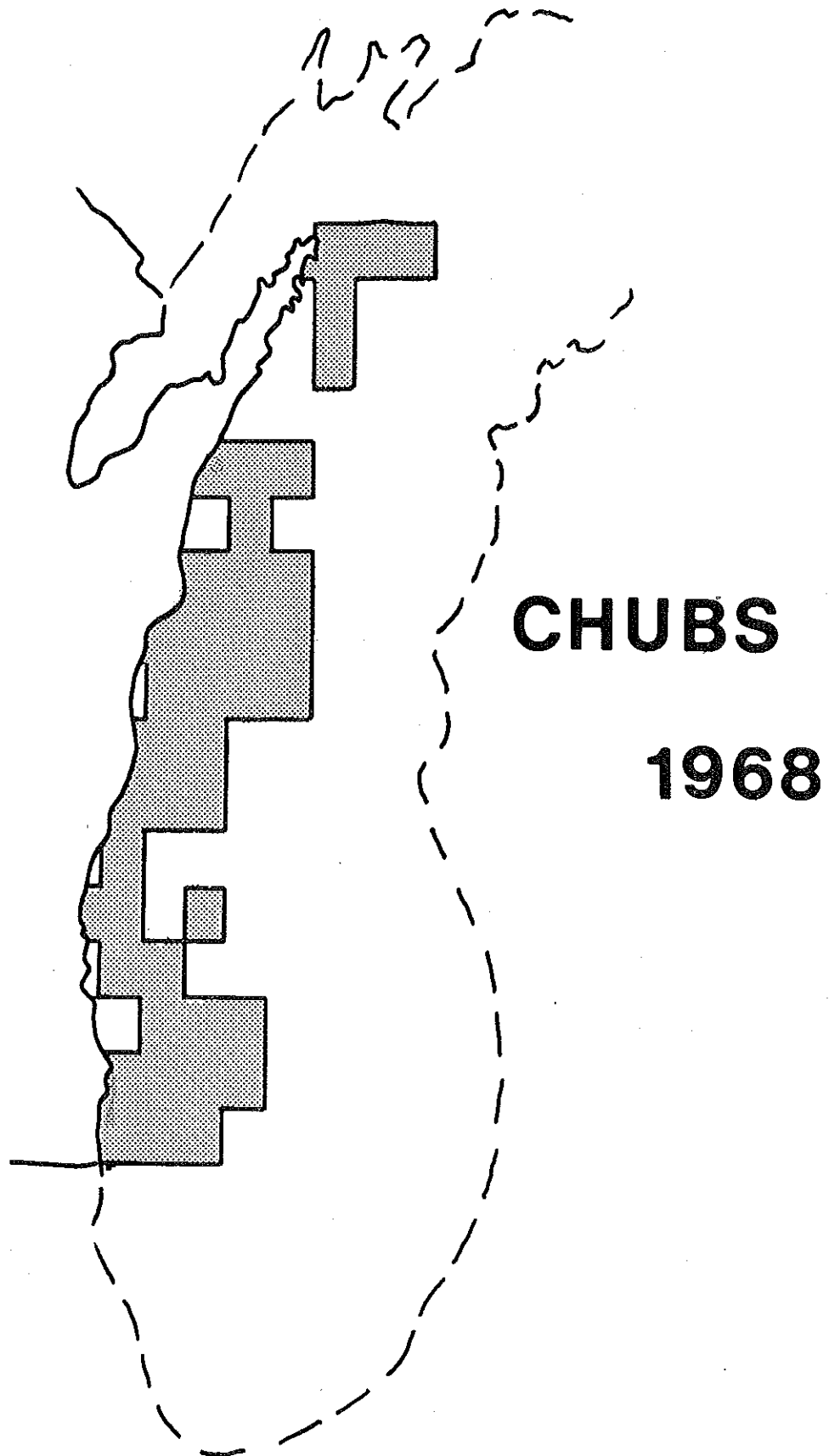
Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in Pounds
2"+ gill net	5	40,900'	5.0	204
4"+ gill net	7	178,500'	14.6	2,610
7"+ gill net	10	499,600'	816.0	407,679
Pound net	3	20 lifts	25.0	500
Shallow trap net	1	14 lifts	462.9	6,480
Deep trap net	2	24 lifts	43.1	1,035
Fyke net	9	1,461 lifts	62.7	91,604
Haul seine 2/	5	683.5	3,902.9	2,667,650
Trawl 3/	2	281.7 hrs.	106.2	29,908
Set hooks 4/	1	240	1.0	235
Total				3,207,905

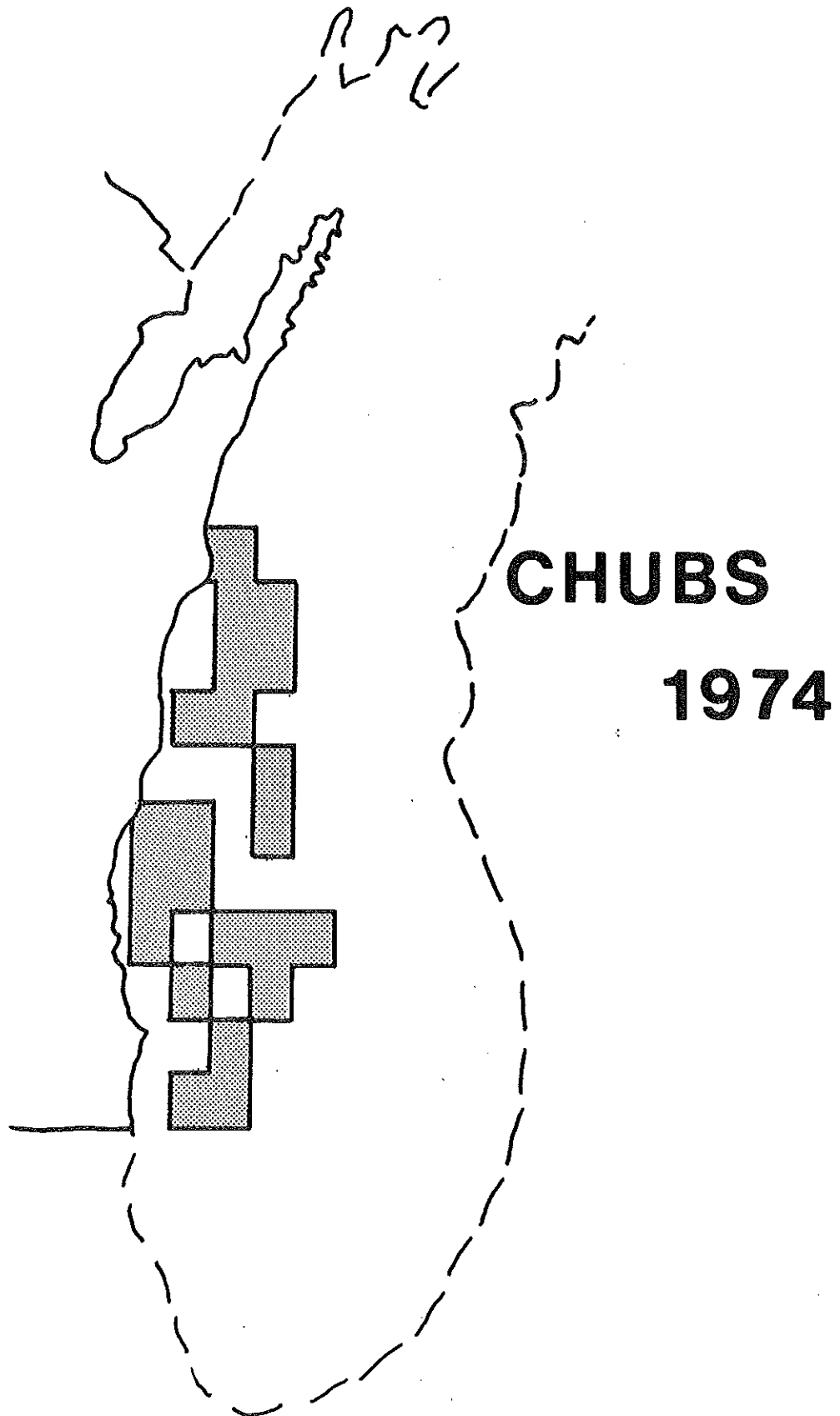
1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear, per 100 feet of seine, per 100 hooks.

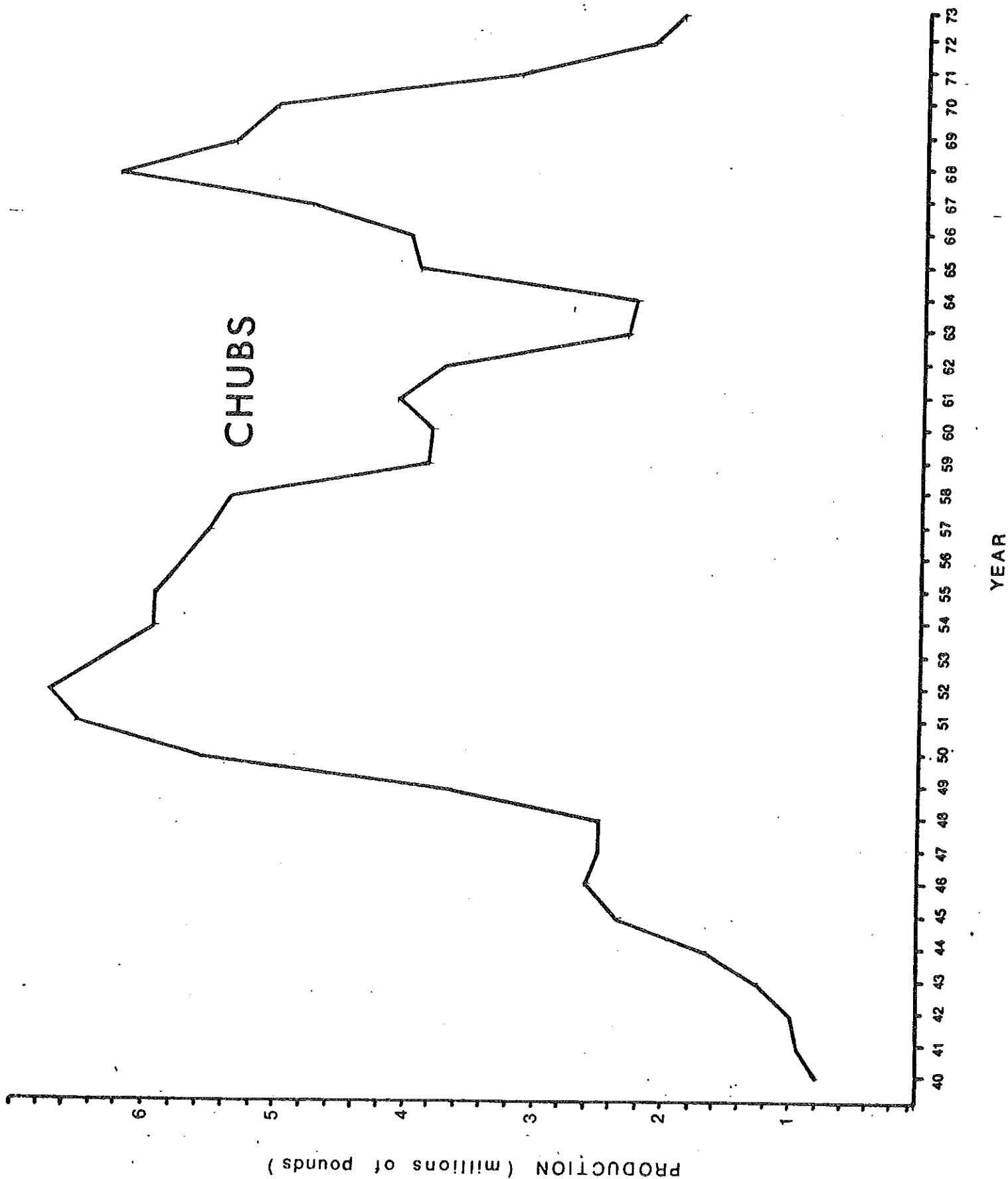
2/ x100 feet.

3/ Effort in hours and tenths.

4/ Effort in 100's of hooks.







CHUBS

Chub production in 1973 was reported at 1,866,989 pounds. This catch is valued at \$852,191.00.

Chub production in Wisconsin waters peaked in 1968 and has shown a steady decline in the years following.

Major chub producing areas lie off the ports of Racine, Kenosha, Milwaukee, Port Washington and Sheboygan. In 1968 chubs were produced in substantial quantities off Algoma, Kewaunee and Manitowoc as well.

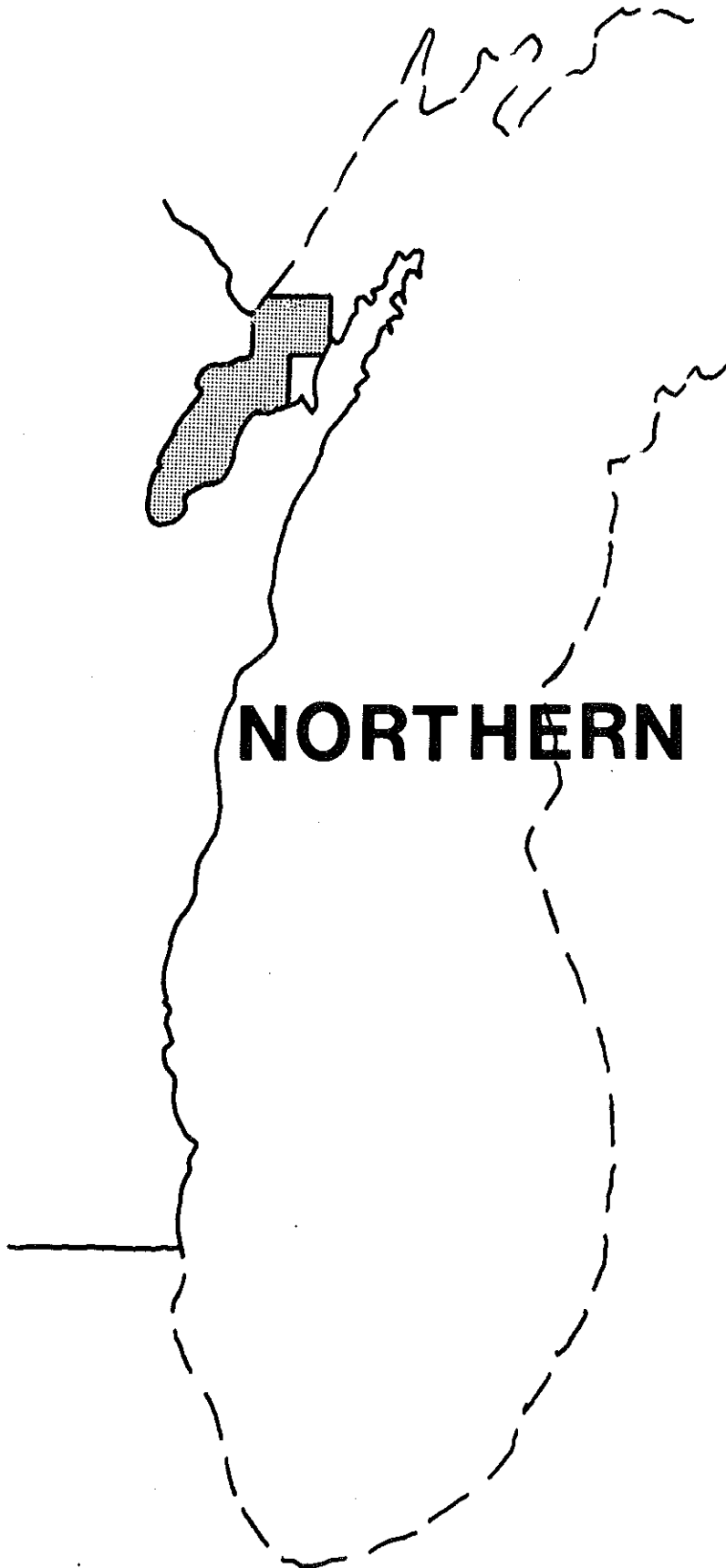
In 1971 Wisconsin had approximately 40 commercial fishermen who reported fishing primarily for chubs in Lake Michigan. At that time 13 of these fishermen produced more than 100,000 pounds of chubs annually and of this number 5 produced more than 200,000 pounds annually. By 1973, 60 individuals reported fishing for chubs, however, only 45 had significant catches and of this number only 6 reported catches in excess of 100,000 pounds of chubs. None produced more than 200,000 pounds.

Thus far in 1974 fewer than 20 fishermen have reported chub catches, the other fishermen being victim to declining stocks and increasing operating costs. Chub fishing is conducted with small mesh gill nets and vessels unique to the Great Lakes capable of operating throughout the year. In 1973 over 39 million lineal feet of small mesh gill net were fished primarily for chubs.

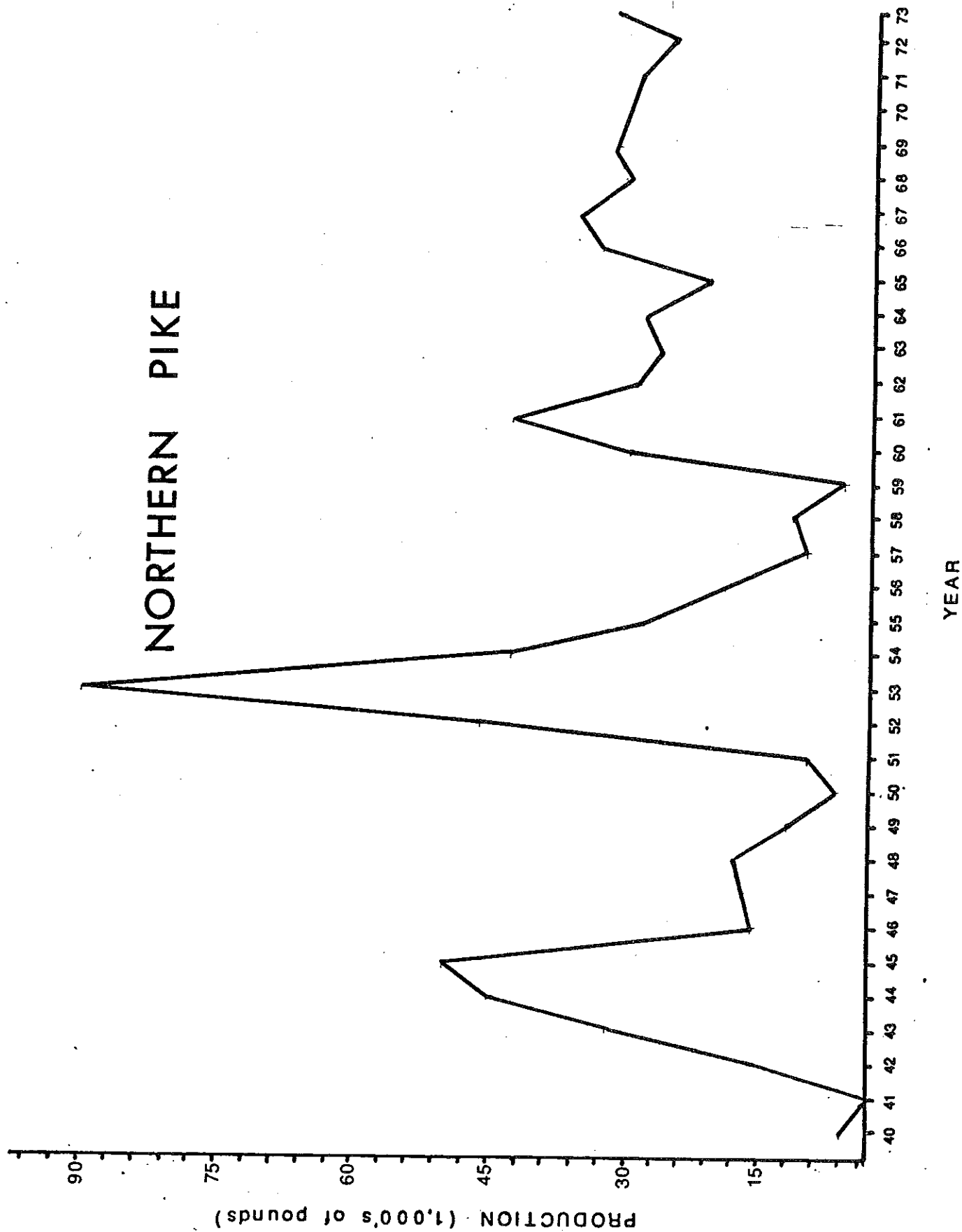
1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in Pounds
2"+ gill net	46	39,161,800'	47.7	1,866,461
4"+ gill net	1	19,200'	27.5	528
			Total	1,866,989

1/ Pounds per 1,000 feet of gill net.



NORTHERN PIKE



NORTHERN PIKE

The commercial harvest of northern pike in 1973 was reported at 31,262 pounds, valued at \$5,962.00.

Northern pike production has averaged about 35,000 pounds each year since 1960. In 1973, 24 fishermen reported catches of northern pike, however many fewer than that actually caught significant quantities. Fyke nets account for two-thirds of the reported catch of this species. Northerns are also taken in large mesh gill nets.

This fishery is confined to Green Bay by law and occurs primarily off of the western shoreline of Green Bay.

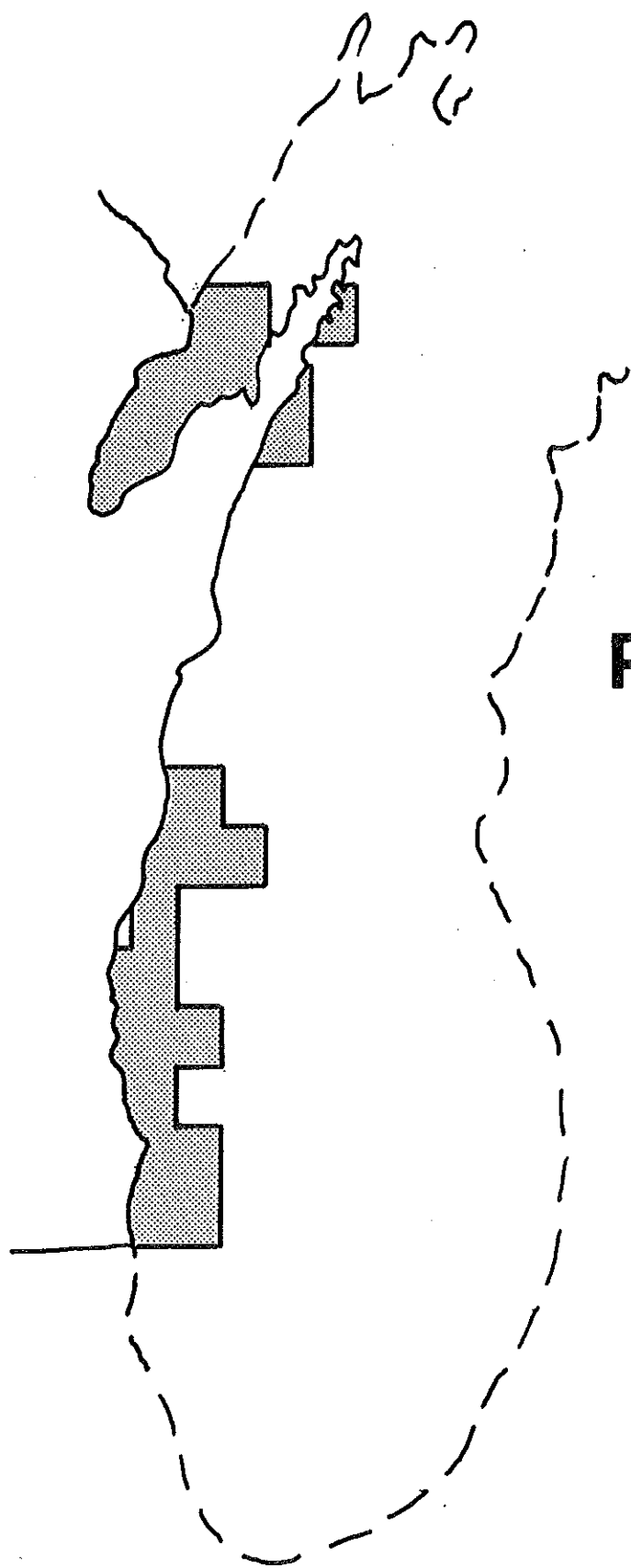
1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in pounds
2"+ gill net	6	40,500'	5.5	223
4"+ gill net	9	140,800'	57.2	8,050
Pound net	3	24 lifts	5.2	124
Shallow trap net	3	78 lifts	12.5	973
Fyke net	15	1,448 lifts	15.1	21,867
Trawl 2/	1	19.0 hrs.	0.3	3
Set hooks 3/	1	120	0.2	22
Total				31,262

1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear, per 100 feet of seine, per 100 hooks.

2/ Effort in hours and tenths.

3/ Effort in 100's of hooks.

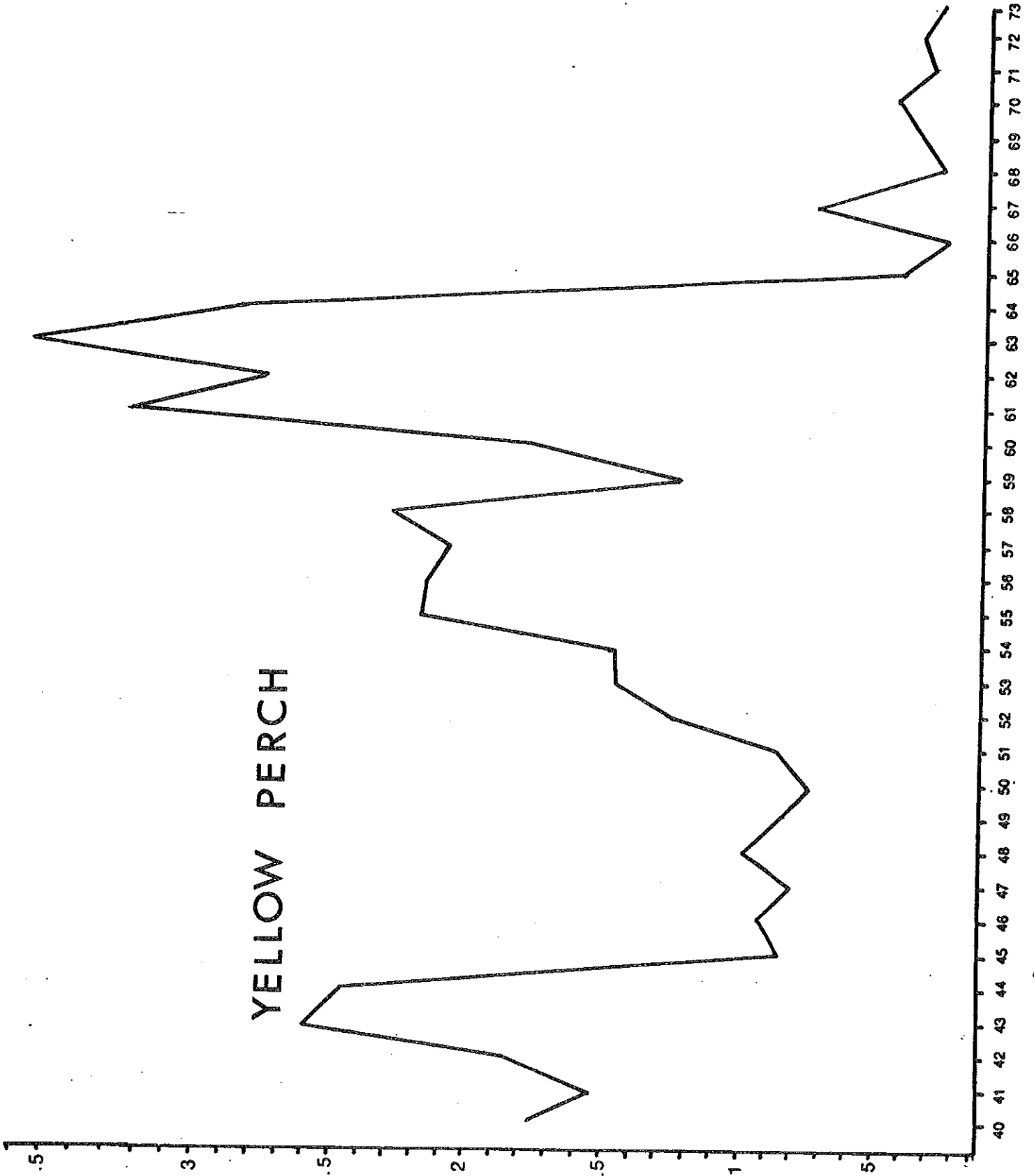


PERCH

YELLOW PERCH

PRODUCTION (millions of pounds)

YEAR



YELLOW PERCH

The commercial harvest of yellow perch in 1973 was reported at 308,468 pounds. This fishery had a value of \$137,097.00.

Major areas producing perch are Green Bay and Wisconsin's southern waters of Lake Michigan.

In 1973 there were 108 fishermen reporting perch catches. Many also fished for other species in Green Bay, catching perch as the opportunity presented itself.

Fyke nets produced slightly less than half the commercial catch while two and one-half inch gill nets produce slightly more than half the catch. Much smaller quantities were produced in trap nets and pound nets.

In the years since 1940 production of yellow perch has only peaked once (1963). Production declined drastically since 1965 and has remained well below the record of three and one-half million pounds.

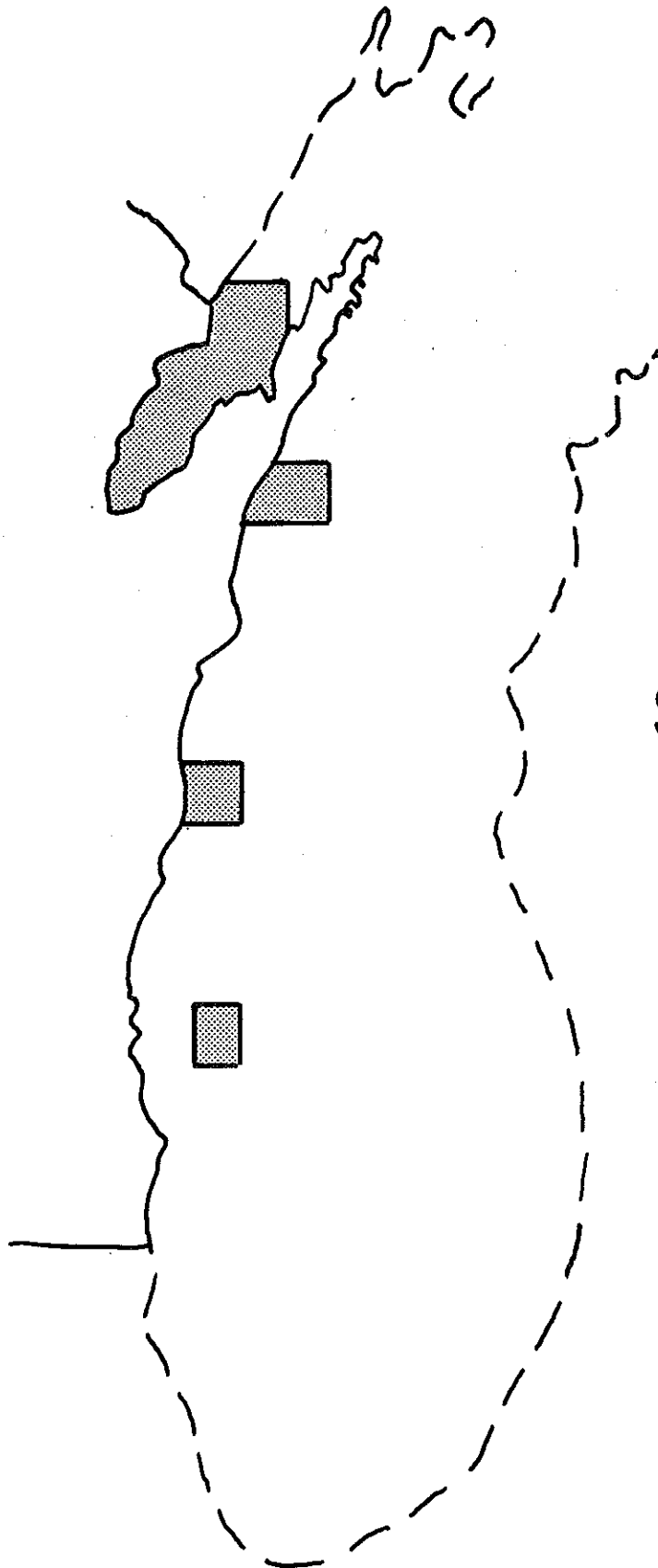
1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in pounds
1"+ gill net	1	21,100'	4.4	93
2"+ gill net	102	7,378,900'	20.8	153,490
4"+ gill net	4	47,000"	3.1	146
Pound net	8	374 lifts	16.2	6,051
Shallow trap net	6	600 lifts	37.1	22,257
Deep trap net	1	2 lifts	7.5	15
Fyke net	22	5,341 lifts	23.6	126,304
Trawl 2/	1	60.5 hrs.	1.1	68
Set hooks 3/	1	240	0.2	44
Total				308,468

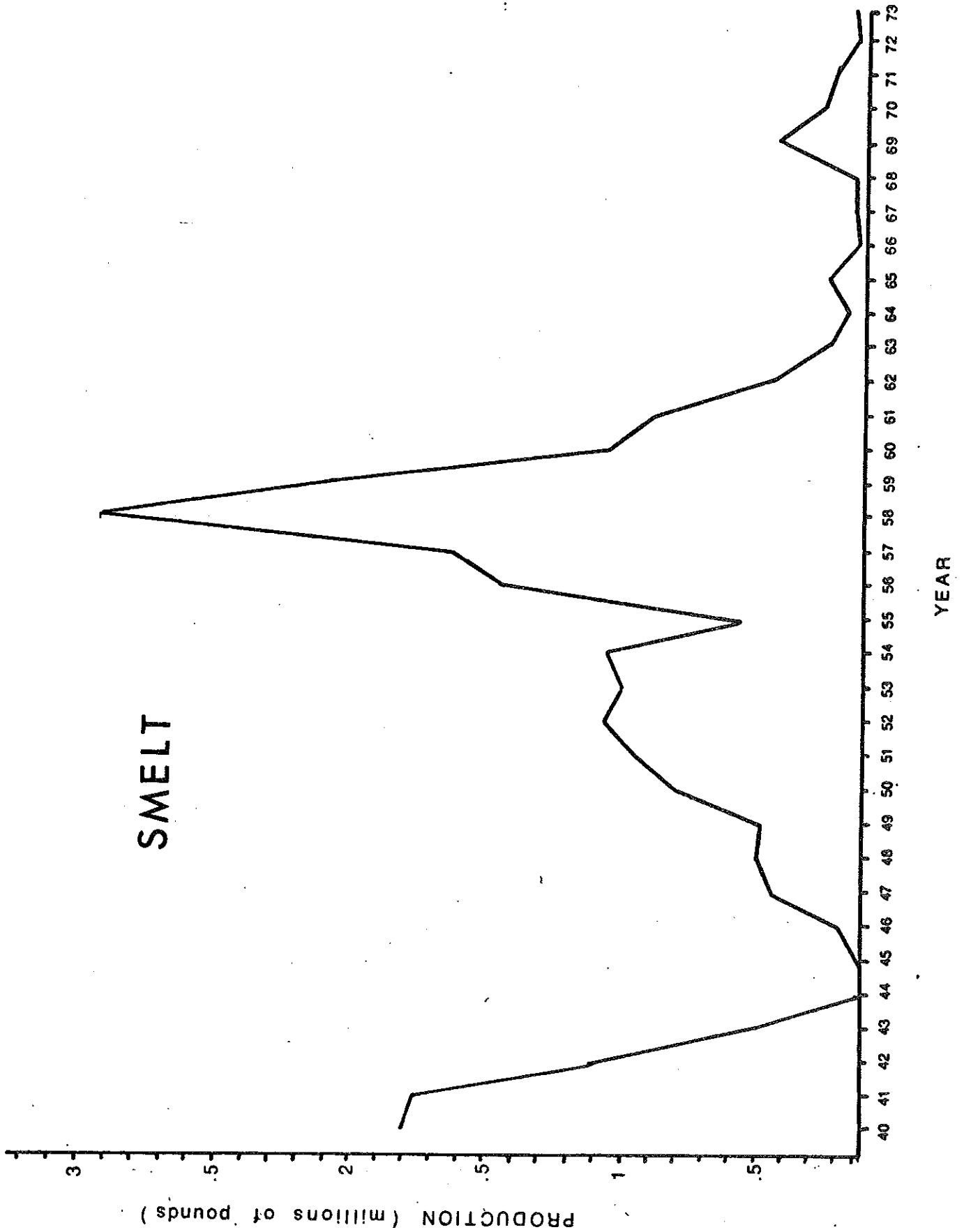
1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear, per 100 hooks.

2/ Effort in hours and tenths.

3/ Effort in 100's of hooks.



SMELT



SMELT

Commercial harvest of smelt in Wisconsin waters in 1973 was reported at 163,084 pounds. This catch was valued at \$4,412.00.

Smelt production has shown marked changes during the years since their introduction. Commercial catch peaked in 1940 and again in 1958. Since 1961 our annual commercial harvest has never exceeded 500,000 pounds. While the fishery is centered in Green Bay, where 56% of the 1973 harvest occurred, a single port on Lake Michigan proper "Algoma" accounted for 36% of that year's total harvest.

The principal gear employed in the smelt fishery is the pound net which produced 74% of the total catch in 1973. Trawlers are responsible for 15% of the annual harvest.

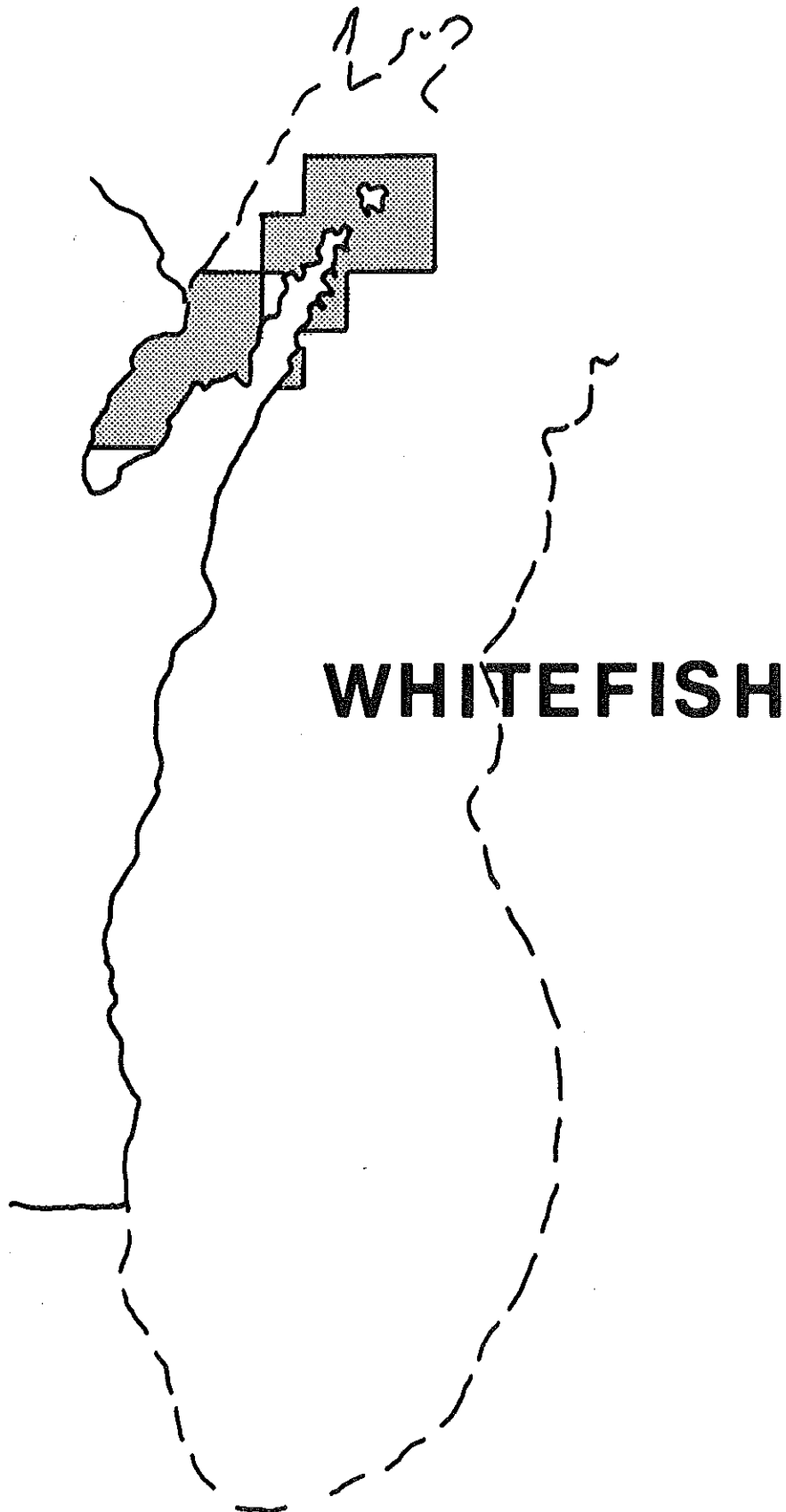
There are 23 fishermen who reported significant smelt catches in 1973. The smelt fishery is highly seasonal with major production occurring in April during the smelt spawning runs. Throughout the summer months smelt production remains fairly stable at a low level.

1973 FISHERY

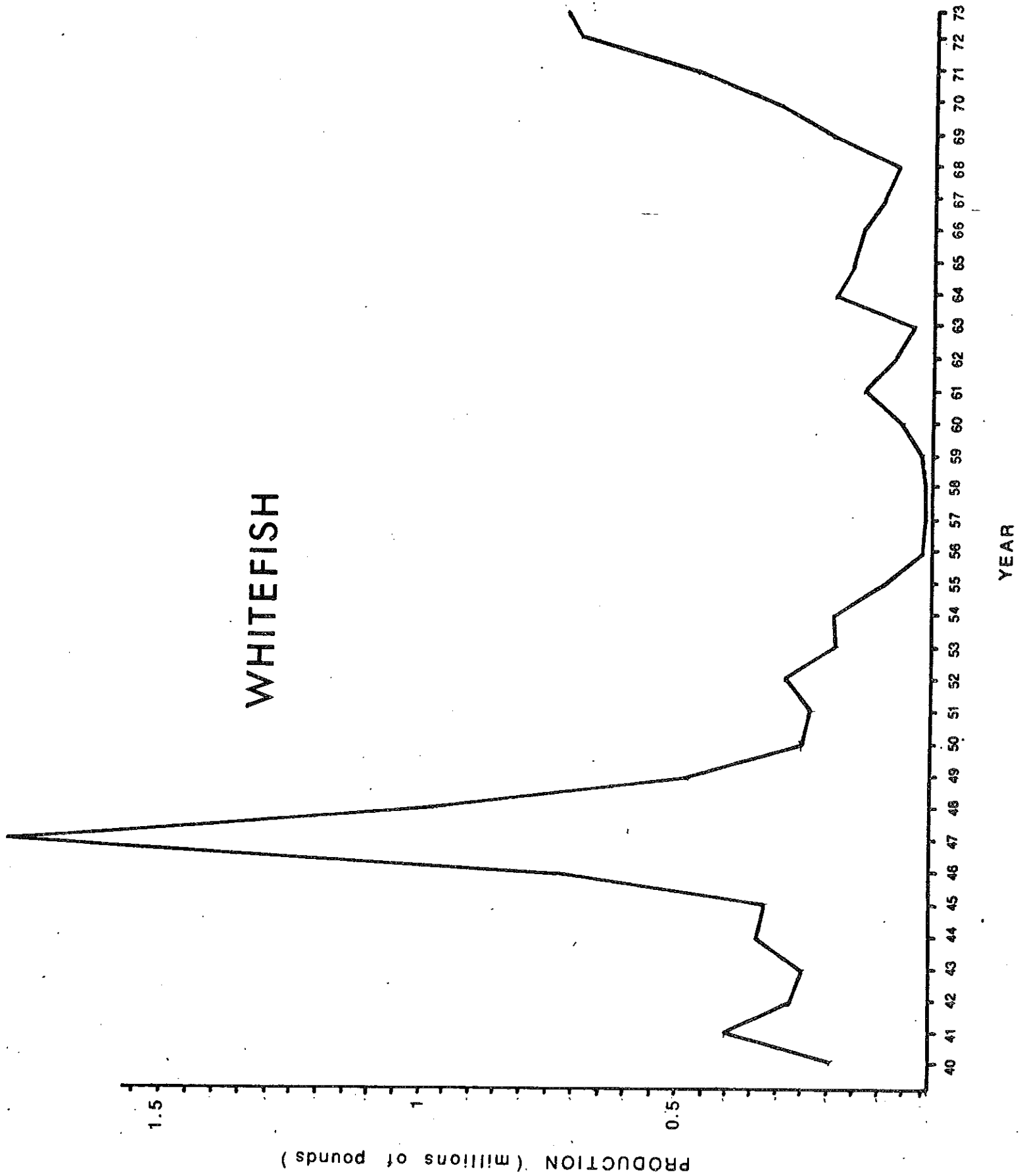
Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in pounds
1"+ gill net	5	30,200'	82.2	2,481
2"+ gill net	21	1,506,100'	5.6	8,498
4"+ gill net	13	2,663,700'	2.6	6,855
Pound net	4	218 lifts	552.5	115,450
Trawl 2/	1	49.7 hrs.	499.0	18,800
Total				152,084

1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear.

2/ Effort in hours and tenths.



WHITEFISH



WHITEFISH

The commercial harvest of whitefish in 1973 exceeded 750,000 pounds. This catch was valued at \$495,000.00.

The fishery is centered in northern Door County waters of Green Bay. However, recent increases have been noted in the waters off Sturgeon Bay, Marinette and Oconto, all further south in Green Bay.

In only five years since the documentation of the fishery in Wisconsin began has whitefish harvest exceeded that of 1973, (1885-1897-1931-1948-1948). Production reached an all time low in 1958 when only 9,219 pounds were taken.

Sea lamprey predation can be ~~directly~~ blamed for the low years in whitefish production and control of lamprey can take some of the credit for recent increases in production.

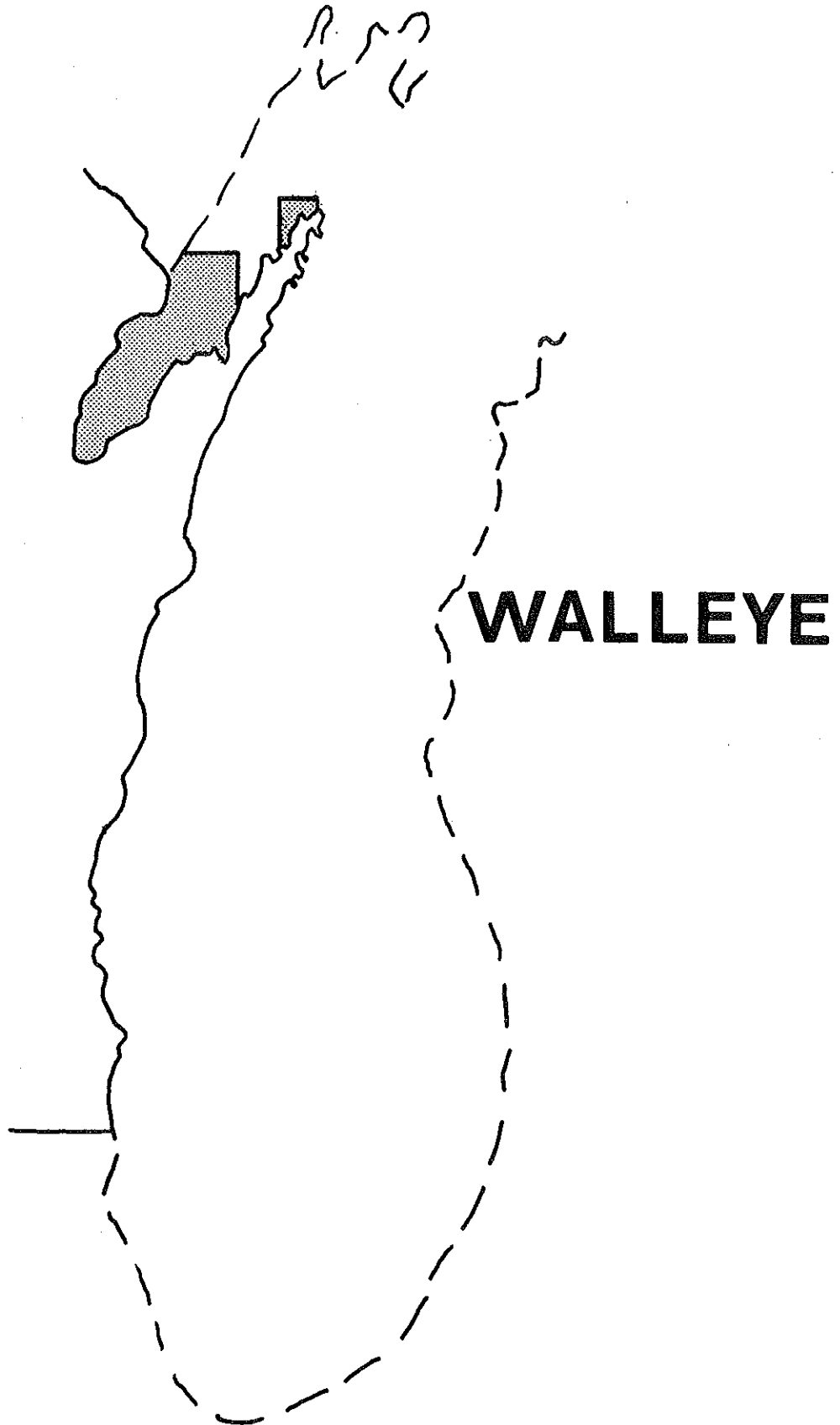
The whitefish fishery is primarily conducted with large mesh gill nets. In 1973, 85% of the catch was produced by four and one-half inch stretch mesh gill nets. Pound nets produced nearly all the remaining catch.

There were 69 fishermen who produced whitefish in the 1973 fishery. In recent years the numbers of fishermen involved have increased with the increase in catch. However, the catch per unit of effort in the last three years has not increased. Gill net effort has doubled since 1970 to 21.4 million lineal feet lifted in the last year.

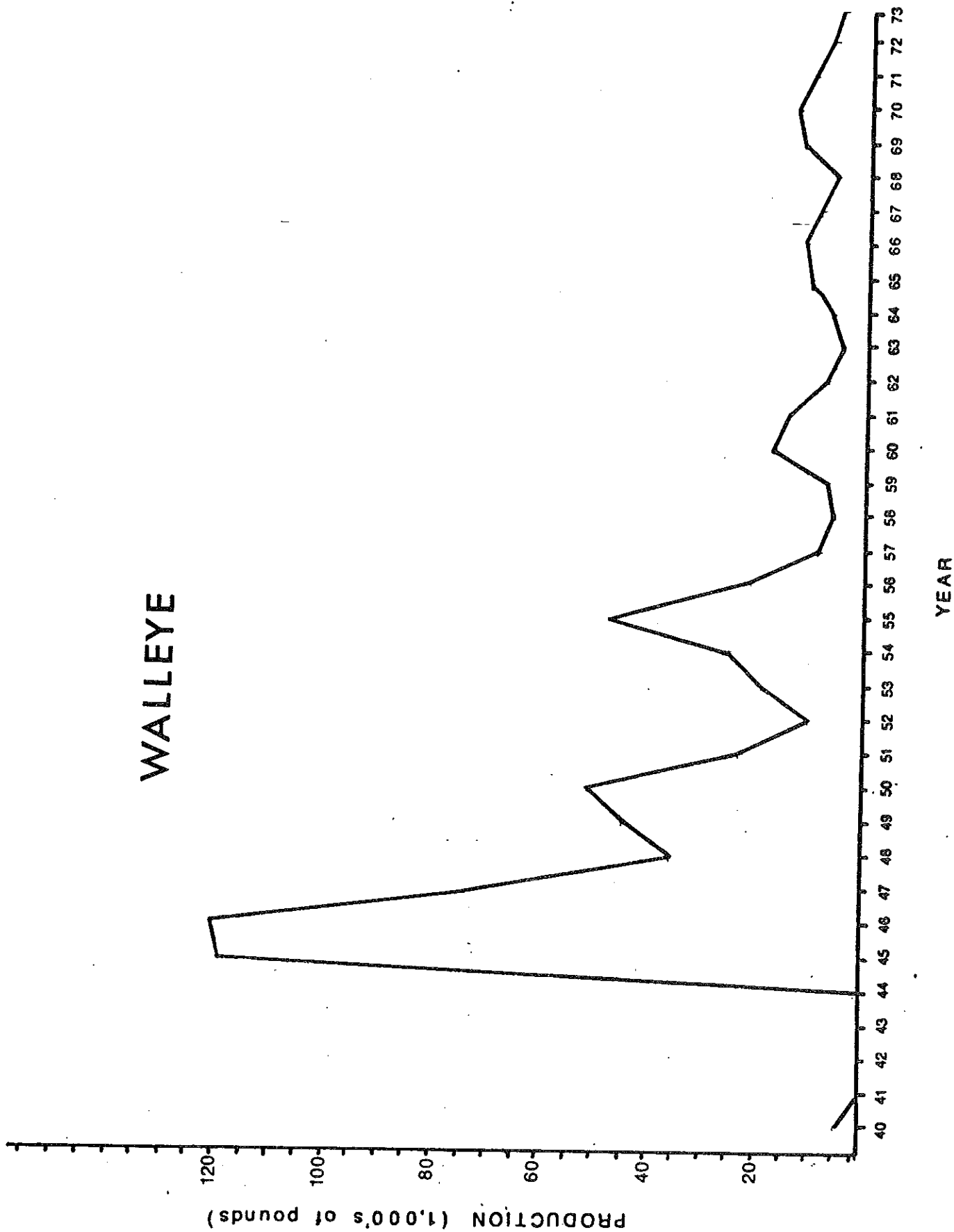
1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per 1/ Unit of Effort	Catch in pounds
2"+ gill net	5	156,600'	19.8	3,094
4"+ gill net	69	21,506,300'	29.7	639,085
Pound net	9	582 lifts	183.5	106,808
Deep trap net	1	54 lifts	9.9	535
Fyke net	1	54 lifts	0.1	5
Total				749,530

1/ Pounds per 1,000 feet of gill net, per lift of entrapping gear.



WALLEYE



WALLEYE

The commercial harvest of walleyes in 1973 was reported at 3,674 pounds valued at \$1,887.00.

By law this fishery is restricted to the waters of Green Bay. Production in 1973 was the lowest of the last 30 years. There has been a steady decline in the last four years. Records would indicate peaks in production every four to six years.

Fyke nets account for 74% of Wisconsin's walleye production. Gill nets, pound nets and trap nets take lesser quantities of walleyes.

In all, only 16 fishermen reported walleye catches in 1973.

1973 FISHERY

Gear Type	Fishermen	Effective Effort	Catch per <u>1</u> / Unit of Effort	Catch in Pounds
2"+ gill net	3	21,800'	2.4	53
4"+ gill net	7	39,000'	14.6	568
Pound net	3	14 lifts	11.9	167
Shallow trap net	1	49 lifts	3.1	151
Fyke net	8	1,067 lifts	2.6	2,731
Trawl <u>2</u> /	1	18.0 hrs.	0.2	4
Total				3,674

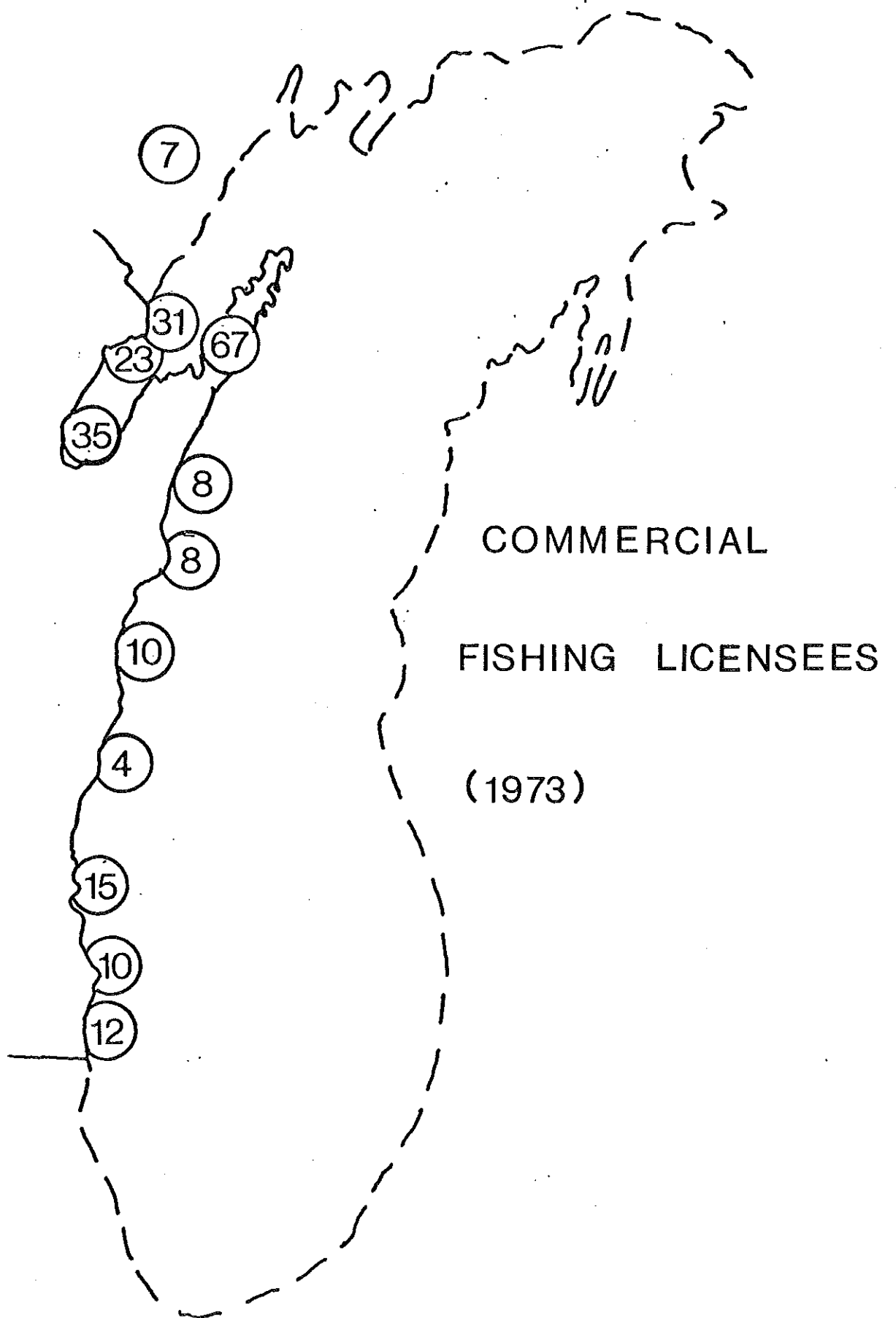
1/ Pounds per 1,000 feet of gill net, per hour of trawling, per lift of entrapping gear.

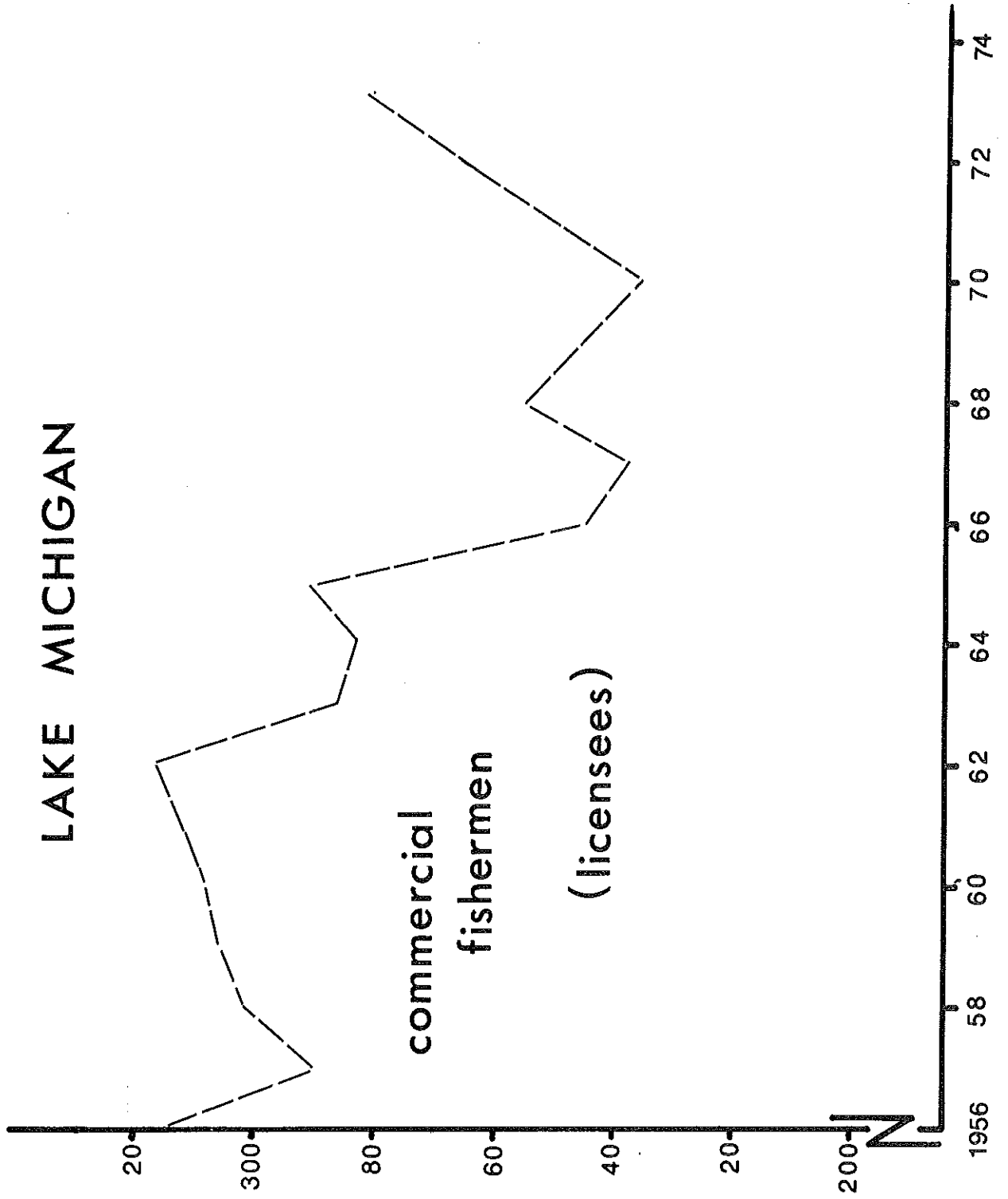
2/ Effort in hours and tenths.

Commercial Licensees

The attached map illustrates the distribution of 230 commercial fishing licensees, by county, as of December 1, 1973. Ultimately in 1973, Wisconsin licensed 280 persons to fish commercially in these waters. Most licenses issued in late December were for the use of gill nets under the ice in the perch and whitefish fisheries of Green Bay.

The graph of license sales extending back to 1956 illustrates the decline in fishermen which had occurred in the years from 1962 to 1970 and the increase in more recent years due primarily to increasing abundance of whitefish.





Production Statistics

The following tables are furnished by the U. S. Fish & Wildlife Service at Ann Arbor, Michigan and reflect total Wisconsin catch by month, by gear and by species.

The total value of the Lake Michigan commercial catch in 1973 was \$1,971,050. Those species contributing most in order of value were: chubs (43%), whitefish (25%), alewives (16%), and yellow perch (7%).

STATE OF WISCONSIN - LAKE MICHIGAN - 1973

SPECIES PRODUCTION AND VALUE

GRAND TOTAL FOR ALL PORTS

SPECIES	POUNDS	VALUE
ALEWIVES	31298228	314324
BULLHEADS	33158	5149
BURBOT	113967	2735
CARP	3207905	130604
CATFISH	120	45
CHUES NO 1 HUMAN FOOD	1266257	652153
CHUES NO 2 HUMAN FOOD	594817	200038
CROSS ANIM. FOOD	5915	0
LAKE HERRING 1	3106	1113
LAKE TROUT LEAN	1954	0
LAKE TROUT FAT	479	0
NORTHERN PIKE	31262	5962
SHEEPSHEAD	2613	219
SHELT HUMAN FOOD	152084	4312
SHELT ANIM. FOOD	11000	110
SUCKERS	449503	13559
WALLEYE	3674	1897
WHITE BASS	3853	685
WHITEFISH	749530	494580
WENOWAEE	12873	6458
YELLOW PERCH	306468	137097
TOTAL	38250766	1971050

SPECIES PRODUCTION IN POUNDS BY MONTH FOR 1973

STATE OF WISCONSIN - LAKE MICHIGAN

SPECIES	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL
ALEXIVES	3	34	50	700392	2440991	9307766	9963642	2668146	1935302	2106916	1579971	5950153	1298228
BULLHEADS	289	315	386	0	660	2623	3247	5815	5002	9996	4314	511	33158
BURBOT	10396	11814	6927	9596	1555	2582	2751	2395	14796	21754	15835	13565	113967
CARP	231050	169164	123294	383260	497473	553501	401688	458127	225412	77594	5314	82028	9207905
CATFISH	0	0	0	0	35	17	0	25	28	15	0	0	120
CHUBS NO 1 HUMAN	137651	112919	101166	92538	113586	132211	113810	82570	77142	74484	90755	137125	1266257
CHUBS NO 2 HUMAN	53961	54497	60067	57160	57207	65046	61574	61455	41009	25595	26687	26840	594817
CHUBS ANIM. FOOD	375	475	0	530	120	525	495	485	485	1100	640	685	5913
LAKE HERRING 1	111	73	156	16	5	592	175	272	564	568	184	590	3106
LAKE TROUT LEAN	280	373	194	194	109	43	0	70	277	86	5	253	1954
LAKE TROUT FAT	24	53	6	55	99	39	22	16	0	125	0	0	479
NORTHERN PIKE	4296	1889	165	0	4095	2543	2650	4625	4594	3330	1718	1337	31262
SHEEPSHEAD	0	0	0	0	0	820	753	376	466	198	0	0	2613
SMELT HUMAN FOOD	11	106	64	117778	103	16515	395	2373	5326	5429	1488	296	152084
SMELT ANIM. FOOD	0	0	0	0	11000	0	0	0	0	0	0	0	11000
SUCKERS	11791	16216	53147	70651	33289	153107	20765	19216	25304	31289	9526	5202	449503
WALLEYE	7	8	5	0	484	433	553	707	1225	370	62	20	3674
WHITE BASS	0	0	0	65	14	1635	939	410	421	319	0	0	3853
WHITEFISH	52120	69911	67029	102288	105072	69716	18442	49100	73078	101471	0	40503	749530
WENOMINEE	0	0	0	0	139	520	3302	5068	1949	152	1743	0	12873
YELLOW PERCH	2780	1880	4011	2422	10456	19728	16220	34662	51706	104271	53386	6946	308468
TOTAL	505145	439767	416677	1537265	3277372	10332612	10611423	3395913	2464085	2567962	1791628	9109173	8250766

SPECIES PRODUCTION IN POUNDS BY GEAR FOR 1973

STATE OF WISCONSIN - LAKE MICHIGAN

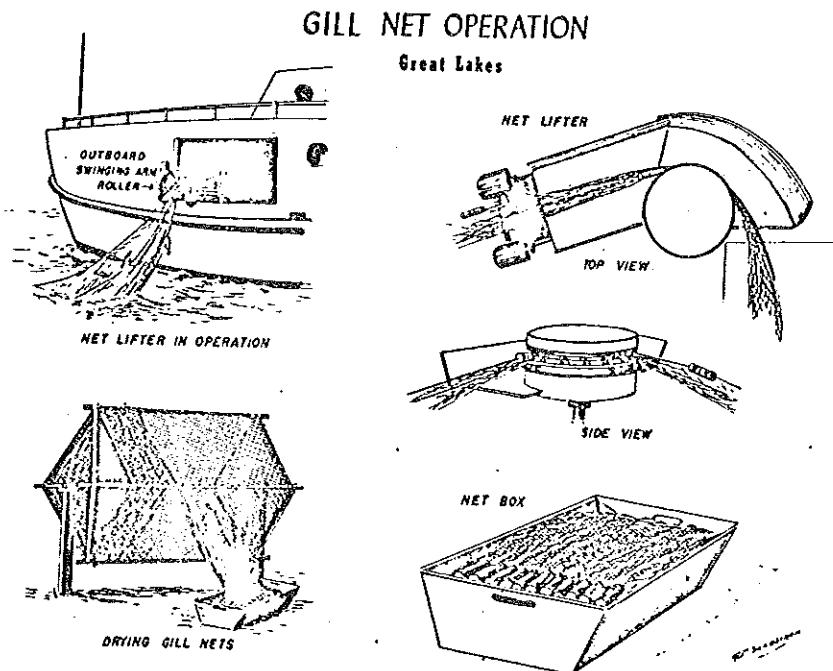
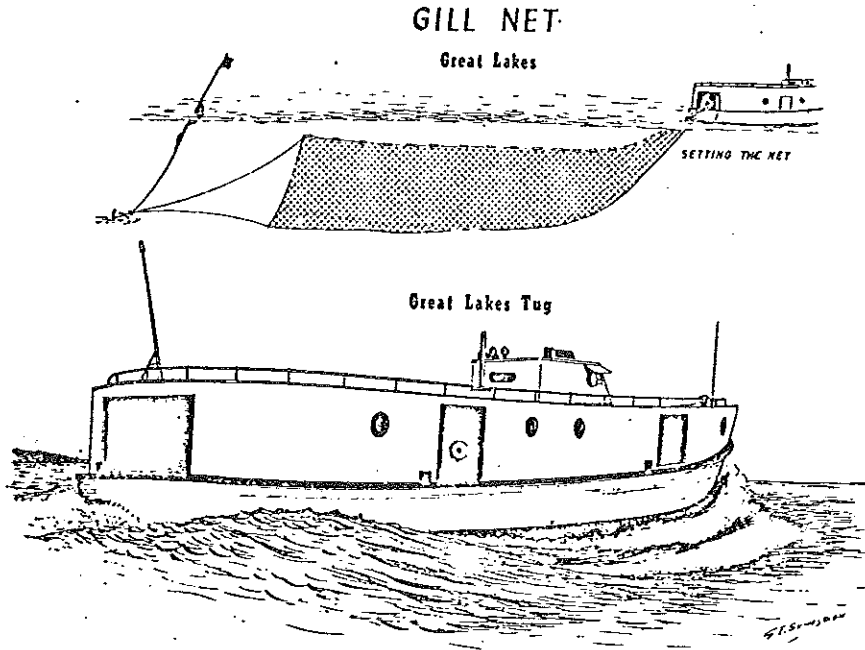
SPECIES	1 INCH GILL	2 INCH GILL	3 INCH GILL	4 INCH GILL	7 INCH GILL	10 INCH GILL	POUND NET	D TRAP NET	S TRAP NET	FYKE NET	HAUL SEINE	SET HOOKS	OTTER TRAWL	TOTAL
ALEMIVES	0	42078	0	127295	0	0	015012086	0	77575	57174	0	0	015982020	31298228
BULLHEADS	0	561	0	0	0	0	11	10	331	31535	0	710	0	33158
BURBOT	0	3783	0	56077	0	0	1205	13	1525	51064	0	0	300	113967
CARP	0	204	0	2610407679	0	0	500	1035	6480	91604	2667650	235	29908	2207505
CATFISH	0	0	0	0	0	0	10	0	4	56	0	20	0	120
CHUSS NO 1 HUMAN	0	1265849	0	408	0	0	0	0	0	0	0	0	0	1265257
CHUSS NO 2 HUMAN	0	594697	0	120	0	0	0	0	0	0	0	0	0	594617
CHUSS ANIM. FOOD	0	5915	0	0	0	0	0	0	0	0	0	0	0	5915
LAKE HERRING 1	0	1167	0	1933	0	0	6	0	0	0	0	0	0	5106
LAKE TROUT LEAN	0	348	0	1586	0	0	20	0	0	0	0	0	0	1934
LAKE TROUT FAT	0	0	0	479	0	0	0	0	0	0	0	0	0	479
NORTHERN PIKE	0	223	0	8050	0	0	124	0	973	21867	0	22	3	31262
SHEEPSHEAD	0	0	0	0	0	0	0	0	0	2508	0	105	0	2613
SMELT HUMAN FOOD	2481	8498	0	6855	0	0	115450	0	0	0	0	0	18800	152084
SMELT ANIM. FOOD	0	0	0	0	0	0	5000	0	0	0	0	0	8000	11000
SUCKERS	0	30616	0	80141	0	0	16730	2450	28117	137624	121000	0	32825	449503
WALLEYE	0	53	0	568	0	0	167	0	151	2731	0	0	4	5874
WHITE BASS	0	0	0	0	0	0	10	0	65	3533	0	145	0	3553
WHITEFISH	0	3094	0	639085	0	0	106608	535	0	5	0	0	3	749550
WHEATFISH	129	12696	0	34	0	0	14	0	0	0	0	0	0	12873
YELLOW PERCH	93	153490	0	146	0	0	6051	15	22257	126304	0	44	68	308463
TOTAL	2703	2123272	0	925387407679	0	0	015264192	4098	137478	526135	2768650	128116069931	36250765	38

APPENDIX

Commercial Gear Used on Lake Michigan

By James Moore

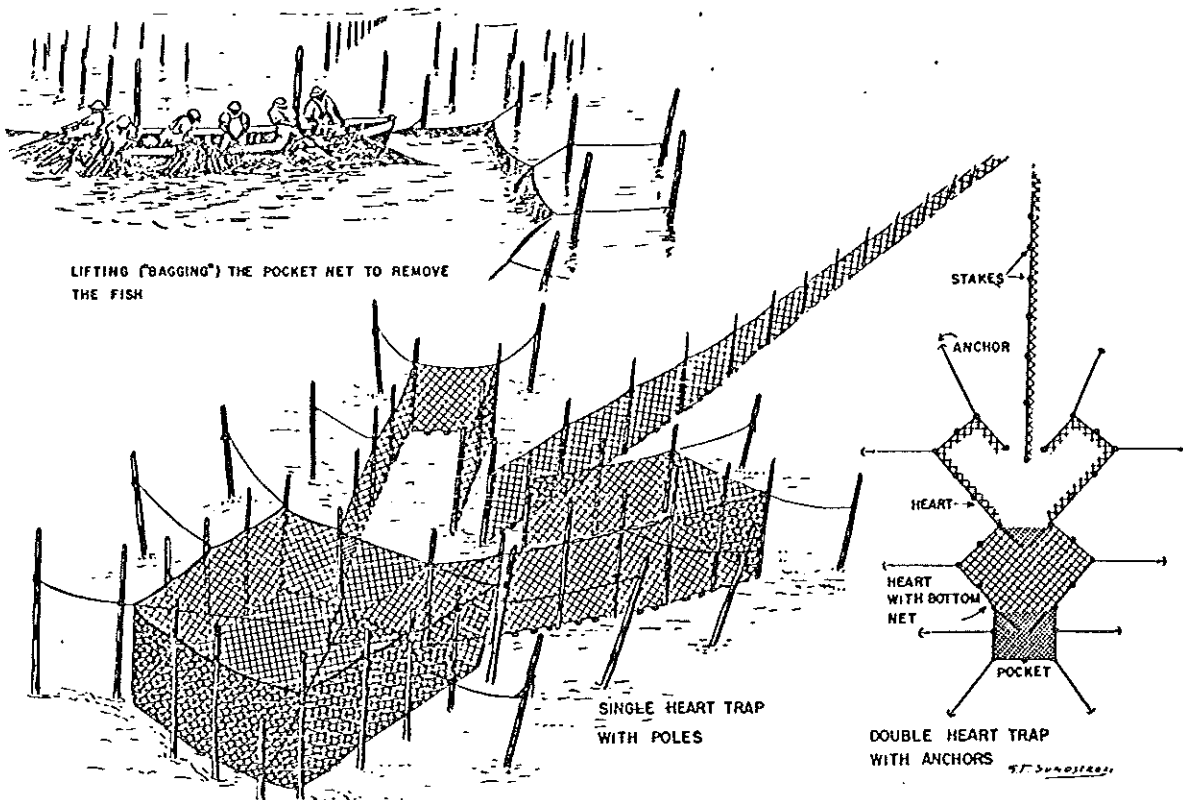
Gill Net



Gill nets are the major gear used to commercially fish Lake Michigan. The principal species fished for with gill nets are whitefish, chubs, and perch. The mesh size of the gill net usually varies with the species it is used for. For whitefish, the gill net most often used measures 4-1/2 inches (stretch measured). The mesh size used for chubs and perch is usually between 2-1/2 and 2-3/4 inches (stretch measured). The disadvantage of gill nets is that they often kill fish which become "gilled" in the net. This becomes a problem when noncommercial species of trout or salmon utilize the same areas where

nets are set for whitefish or chubs and are caught "incidentally". The major advantage of the gill net is the ease of setting and lifting, and ability to quickly move from one location to the next.

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POUND NET



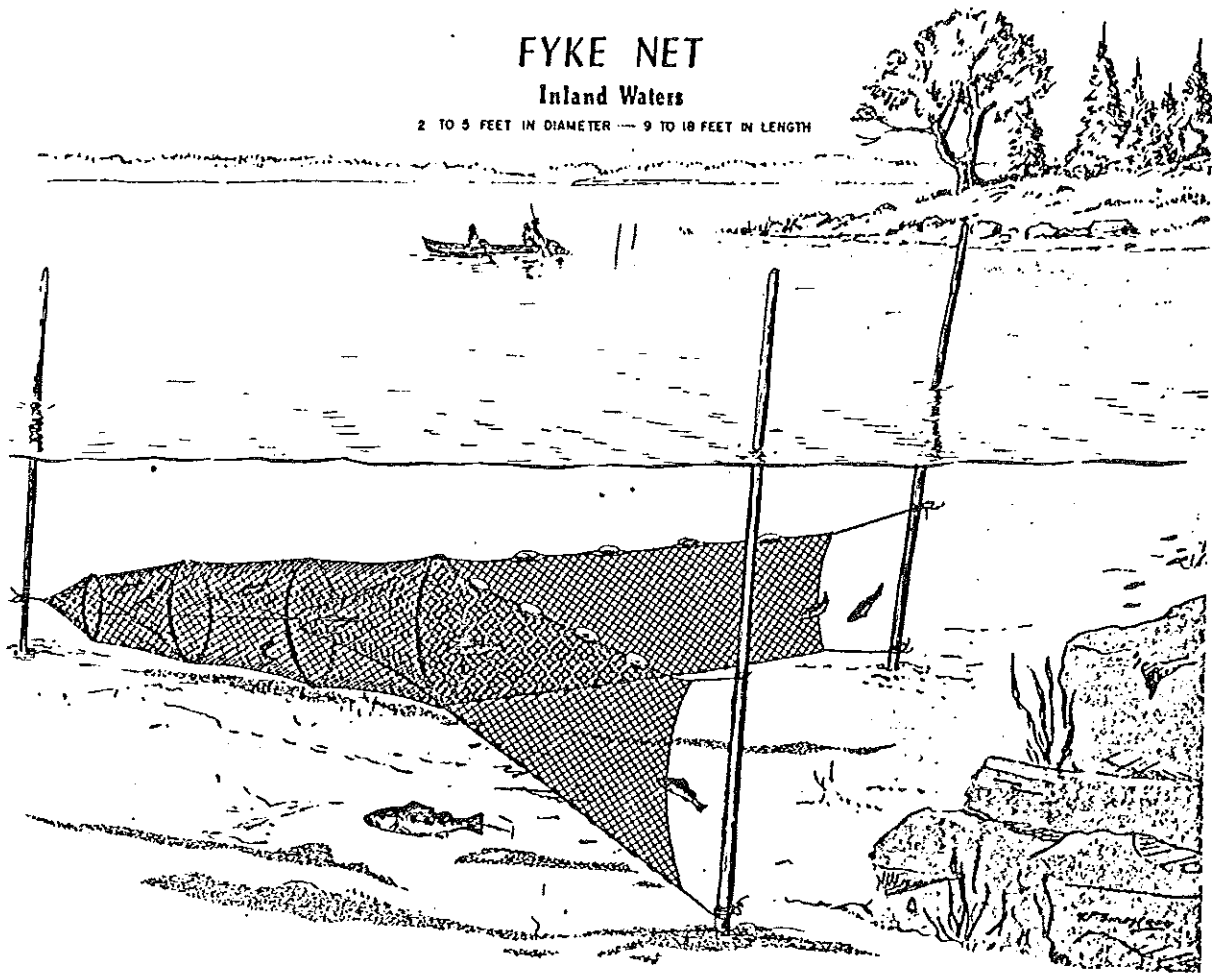
Pound Net

The pound net is a gear fished traditionally for whitefish, herring and in more recent years, for smelt and alewife. Once set, the pound net is not easily moved, and is the only disadvantage of this gear. The fishermen have to rely on their past experience and knowledge of fish movements and habits in choosing a location to set their pound nets. If successful, a pound net is capable of producing thousands of pounds of fish in one days lift.

FYKE NET

Inland Waters

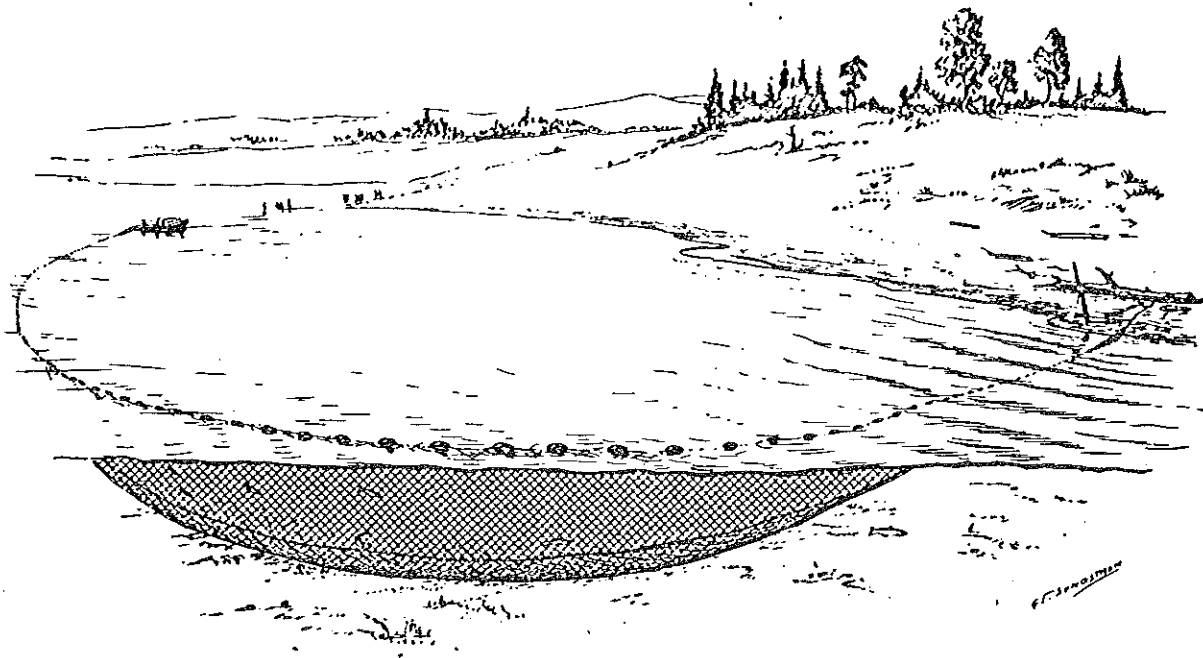
2 TO 5 FEET IN DIAMETER — 9 TO 18 FEET IN LENGTH



Fyke Net

Fyke nets are fished primarily for rough fish on Lake Michigan, and its tributary streams. Unlike the pound net, the fyke net is much easier to set and move from one location to another. This type of gear is often used to fish seasonal migrations of species like suckers and carp.

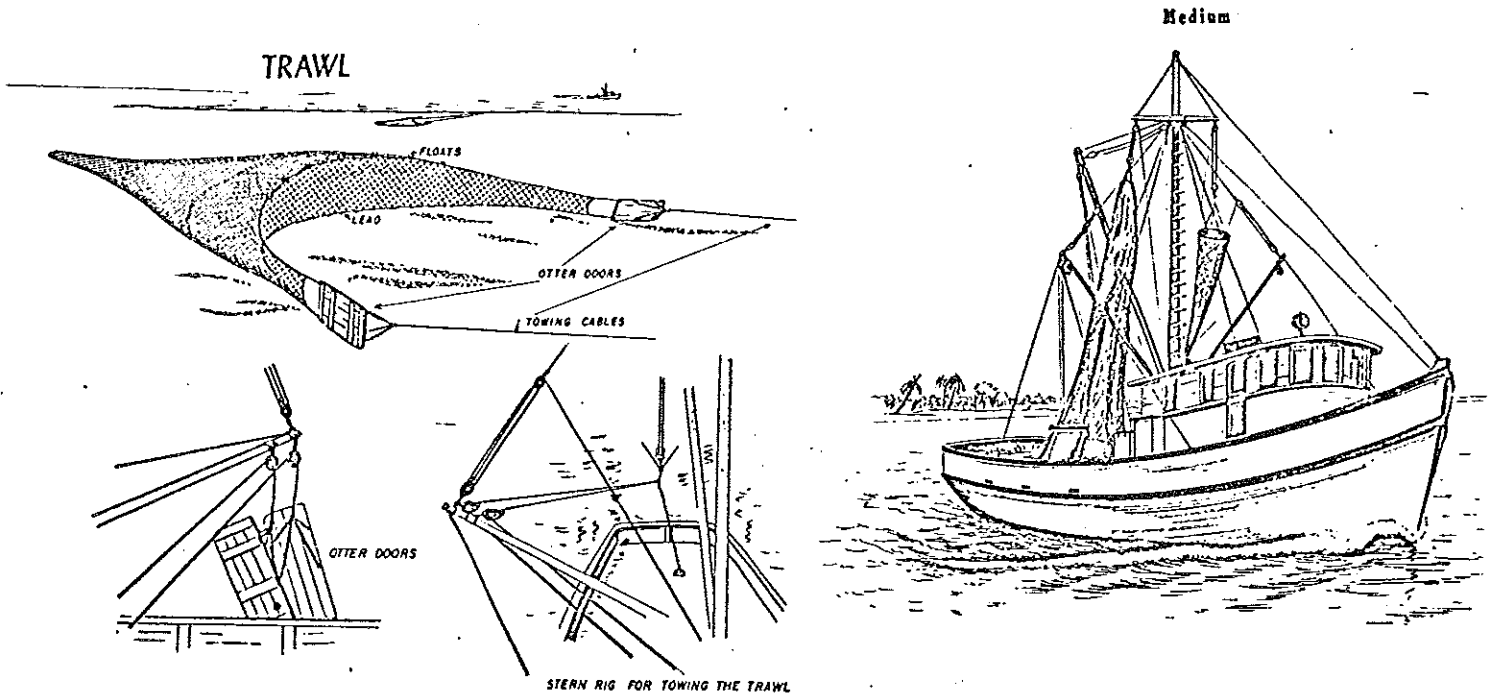
HAUL SEINE



Haul Seine

The haul seine is used primarily in bounded bays of Green Bay and the Door County Peninsula for harvesting carp and other rough fish. Although it is not used extensively, it can be very effective at certain times. A recent catch of over 200,000 pounds of carp in one seine haul was reported in the Sturgeon Bay area. A variable mesh is used, grading from large mesh near the ends of the seine to small mesh in the center bag of the seine.

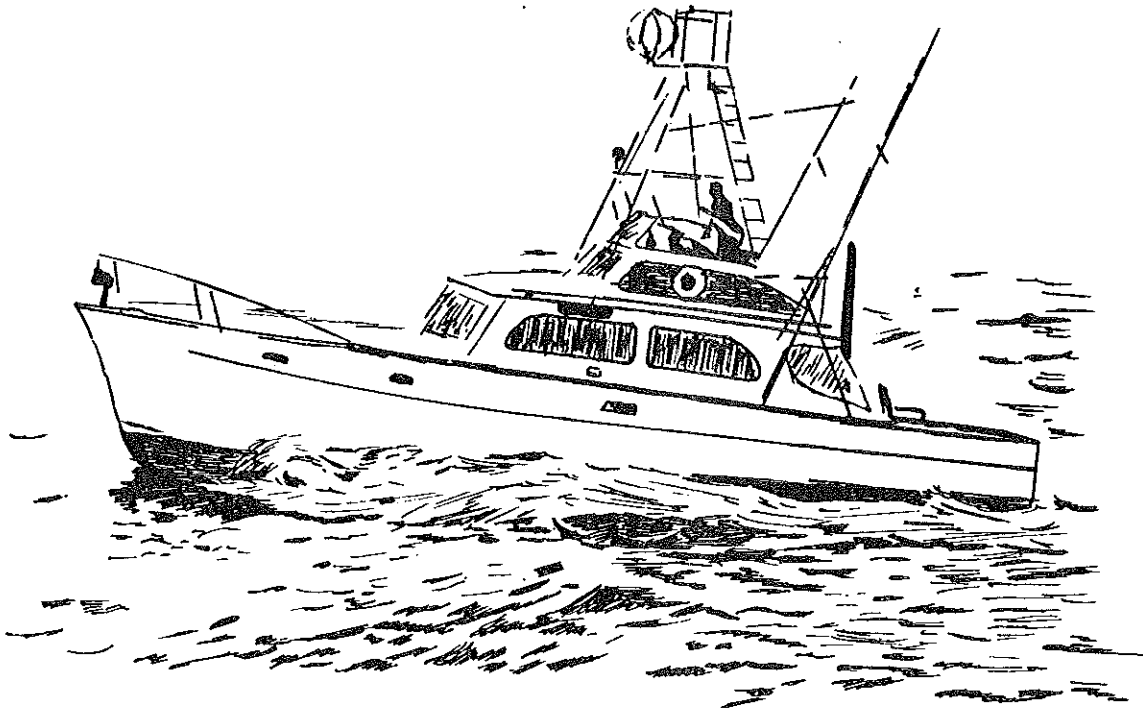
TRAWLER



Trawls

The trawl came to Lake Michigan with the explosion of the alewife population. Industrious fishermen adapted the Gulf of Mexico shrimp trawler techniques, to begin harvesting alewives on Lake Michigan in the early sixties. The harvest has increased dramatically to the current level of nearly 30 million pounds annually. The trawler fleet now comprised of eleven boats, are constantly improving their methods and gear to improve their efficiency.

CHARTER BOAT



Charter Boats

The charter boat is a commercial operation relatively new to Lake Michigan. In ten short years the charter fleet has grown to nearly 100 boats. Many charter captains will catch, during the fishing season, between one and two thousand trout and salmon, the principle species being lake trout. The efficiency of these fishermen has been amazing, often times producing limit catches of five fish per charter member. Techniques many times developed by charter captains have made sport trollers highly successful in their quest for trout and salmon on Lake Michigan.